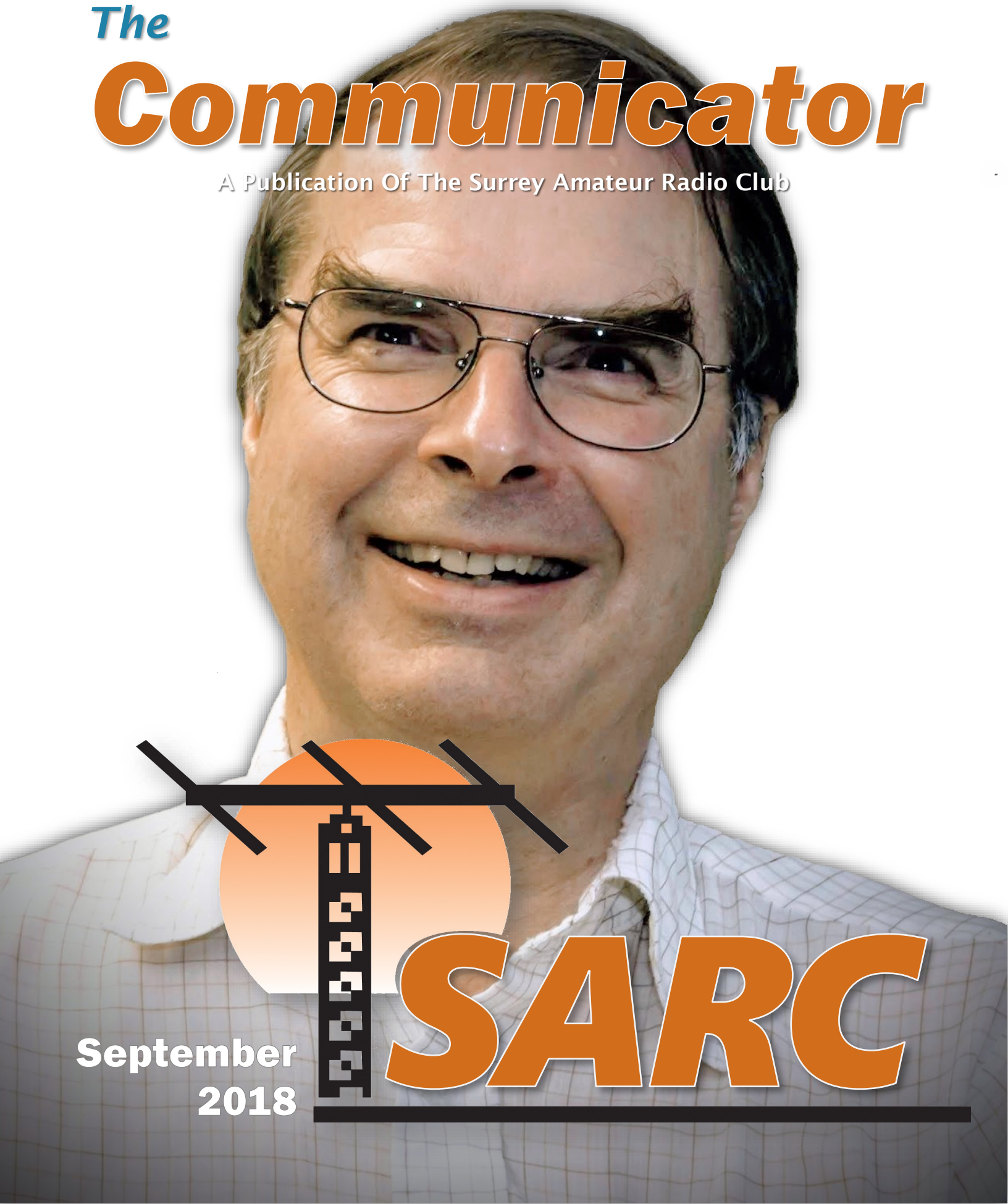


The

Communicator

A Publication Of The Surrey Amateur Radio Club



**September
2018**

SARC

September 2018



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The **Communicator** is a publication of the Surrey Amateur Radio Club. It appears monthly, except July and August, for area Amateur Radio operators, to enhance the exchange of information and to promote local ham radio activity.

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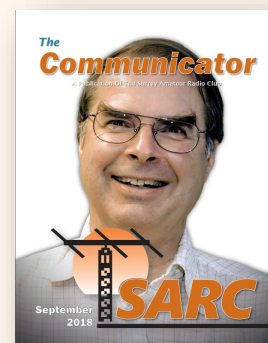
Regular readers who are not SARC members are invited to contribute a \$5 annual [donation](#) towards our Field Day fund.

SARC maintains a website at www.ve7sar.net and a Digital Communicator at ve7sar.blogspot.ca that includes recent news, past issues of The Communicator, club history, photos, videos and other information.

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On The September Cover...

This issue is dedicated to Brett Garrett VE7GM, A SARC and SEPAR member who passed away last month following a brief illness. This month's Radio-Active also remembers Brett and the significant contributions he made to these two Surrey Amateur Radio organizations.



QRM

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...from the Editor's Shack

*Do you have a photo or bit of club news to share?
An Interesting link?*

*Something to sell or something you are looking for?
eMail it to [communicator @ ve7sar.net](mailto:communicator@ve7sar.net) for inclusion in this publication.*

We're back... After a long, hot summer here on the southwest coast of Canada, and with over 600 forest fires still burning in the province at the time of this writing. Many of our fellow hams have been busy providing additional communications on the fire lines and at emergency reception centres. We thank them for their community service.

With this in mind, the SARC Directors met in July and passed a resolution to increase our involvement in public service communications. This is being done primarily for the following reasons:

- It provides valuable opportunities for training and our capabilities in the event of a 'real' emergency;
- It provides greater exposure for Amateur Radio, thereby increasing public awareness of the hobby, its community benefits and its role in emergency communications; and
- It serves to justify our use of spectrum for other than pleasure.

Several of our members received some 'hands-on' training courtesy of our friends at VECTOR this past month. They came in as observers at the Vancouver Emergency

Operations Centre (EOC) and the Communications Command Centre during the Celebration of Lights (*see the write-up on page 38*). Feedback heard over Saturday morning coffee indicates that it was a very worthwhile experience for them. As a result of my own experience at this event as part of the City of Vancouver planning team for several years and later as VECTOR President, I can assure you that Amateur Radio plays a valuable role. I have two examples where lives were saved directly as a result of Ham radio's ability to observe, report and assist and to get emergency services to a location as quickly as possible, given that thousands of people are milling about before, during and after the event. Telephone calls often became impossible as attendees congested the service providers, but radio always got through. As an aside, Amateur TV also brought the first live video of the streets around the fireworks to the Vancouver EOC.

You will hear more about SARC's commitment to public service in the months ahead as further details become available.

~ John VE7TI
Communicator Editor

On the Web

ve7sar.net

Between newsletters, watch your e-mail for news, announcements of Amateur Radio events, monthly meetings and training opportunities.

Click the links below to follow our presence on the web:

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Falling down is part of life... Getting back up is living—Anonymous

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The Rest Of The Story...

Edwin Howard Armstrong

FM Radio Pioneer



Edwin Armstrong

Edwin Howard Armstrong (December 18, 1890 - February 1, 1954) was an American electrical engineer and inventor who discovered feedback and developed the basic electronic circuits that make radio, radar and television possible. His life was consumed by the battle to protect his patents and few people today know anything at all about him or his contributions.

Early life

Armstrong was born in the Chelsea district of New York City, the oldest of John and Emily (Smith) Armstrong's three children. His father began working at a young age at the American branch of the Oxford University Press, which published bibles and standard classical works, eventually advancing to the position of vice president. The family was comfortably middle class.

At the age of eight, Armstrong contracted Sydenham's chorea (then known as St. Vitus' Dance), an infrequent but serious neurological disorder precipitated by rheumatic fever. For the rest of his life, Armstrong was afflicted with a physical tic exacerbated by excitement or stress. Due to this illness, he withdrew from public school and was home-tutored for two years. To improve his health, the Armstrong family moved to a house overlooking the Hudson River, at 1032 Warburton Avenue in Yonkers. The Smith family subsequently moved next door. Armstrong's tic and the time missed

from school led him to become socially withdrawn.

From an early age, Armstrong showed an interest in electrical and mechanical devices, particularly trains. He was fascinated with the early radio broadcasts and tinkered with receiving equipment and antennas trying to improve the quality of his reception. He loved heights and constructed a makeshift backyard antenna tower that included a bosun's chair for hoisting himself up and down its length, to the concern of neighbors. Much of his early research was conducted in the attic of his parent's house.

In 1909, Armstrong enrolled at Columbia University in New York City, where he became a member of the Epsilon Chapter of the Theta Xi engineering fraternity, and studied under Professor Michael Pupin at the Hartley Laboratories, a separate research unit at Columbia. Another of his instructors, Professor John H. Morecroft, later remembered Armstrong as being intensely focused on the topics that interested him, but somewhat indifferent to the rest of his studies. He was known for challenging conventional wisdom and being quick to question the opinions of both professors and peers. In one case, he recounted how he tricked an instructor he disliked into receiving a severe electrical shock. He also stressed the practical over the theoretical, stating that progress was more likely the product of experimentation and work based on physical reasoning than on mathematical calculation and formulae (known as part of "mathematical physics"). Armstrong graduated from Columbia in 1913, earning an electrical engineering degree.

During World War I, Armstrong served in the Signal Corps as a captain and later a major.

(Continued from page 4)

In 1934, he filled the vacancy left by John H. Morecroft's death, receiving an appointment as a Professor of Electrical Engineering at Columbia, a position he held the remainder of his life.

Following college graduation, he received a \$600 one-year appointment as a laboratory assistant at Columbia, after which he nominally worked as a research assistant, for a salary of \$1 a year, under Professor Pupin. Unlike most engineers, Armstrong never became a corporate employee. He set up a self-financed independent research and development laboratory at Columbia, and owned his patents outright.

Early work

Regenerative circuit

Armstrong's "feed back" circuit drawing, from Radio Broadcast vol. 1 no. 1 1922.

Armstrong began working on his first major invention while still an undergraduate at Columbia. In late 1906, Lee de Forest had invented the three-element (triode) "grid Audion" vacuum-tube. How vacuum tubes worked was not understood at the time. De Forest's initial Audions did not have a high vacuum and developed a blue glow at modest plate voltages; De Forest improved the vacuum for Federal Telegraph. By 1912, how vacuum tubes worked was understood, and the advantages of high vacuum tubes were appreciated.

While growing up Armstrong had experimented with the early, temperamental, "gassy" Audions. Spurred by the later discoveries, he developed a keen interest in gaining a detailed scientific understanding of how vacuum-tubes worked. In conjunction with Professor Morecroft he used an oscillograph to conduct comprehensive studies. His breakthrough discovery was determining that employing positive feedback (also known as "regeneration") produced amplification hundreds of times greater than previously attained, with the amplified signals now strong enough so that receivers could use loudspeakers instead of headphones. Further investigation revealed that when the feedback was increased beyond a certain level a vacuum-tube would go into oscillation, thus could also be used as a continuous-wave radio transmitter.

Beginning in 1913 Armstrong prepared a series of comprehensive demonstrations and papers that

carefully documented his research, and in late 1913 applied for patent protection covering the regenerative circuit. On October 6, 1914, U.S. patent 1,113,149 was issued for his discovery. Although Lee de Forest initially discounted Armstrong's findings, beginning in 1915 de Forest filed a series of competing patent applications that largely copied Armstrong's claims, now stating that he had discovered regeneration first, based on August 6, 1912 notebook entry, while working for the Federal Telegraph company, prior to the January 31, 1913 date recognized for Armstrong. The result was an interference hearing at the patent office to determine priority. De Forest was not the only other inventor involved, the four competing claimants included Armstrong, de Forest, General Electric's Langmuir, and Alexander Meissner, who was a German national, which led to his application being seized by the Office of Alien Property Custodian during World War I.

Following the end of World War I Armstrong enlisted representation by the law firm of Pennie, Davis, Martin and Edmonds. In order to finance his legal expenses he began issuing non-transferable licenses for use of the regenerative patents to a select group of small radio equipment firms, and by November 1920 seventeen companies had been licensed. These licensees paid 5% royalties on their sales which were restricted to only "amateurs and experimenters". Meanwhile, Armstrong reviewed his options for selling the commercial rights to his work. Although the obvious candidate was the Radio Corporation of America (RCA), on October 5, 1920 the Westinghouse Electric & Manufacturing Company took out an option for \$335,000 for the commercial rights for both the regenerative and super heterodyne patents, with an additional \$200,000 to be paid if Armstrong prevailed in the regenerative patent dispute. Westinghouse exercised this option on November 4, 1920.

Legal proceedings related to the regeneration patent became separated into two groups of court cases. An initial court action was triggered in 1919 when Armstrong sued de Forest's company in district court, alleging infringement of patent 1,113,149. This court ruled in Armstrong's favor on May 17, 1921. But a second line of court cases, the result of the patent office interference hearing, would have a different outcome. The interference board had also sided with Armstrong, but he was unwilling

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The interference board had also sided with Armstrong, but he was unwilling to settle with de Forest for less than what he considered full compensation

to settle with de Forest for less than what he considered full compensation. Thus pressured, de Forest decided to continue his legal defense, and appealed the interference board decision to the District of Columbia district court. On May 8, 1924, that court ruled that it was de Forest who should be considered regeneration's inventor. Armstrong (along with much of the engineering community) was shocked by this course of events, and his side appealed this unexpected decision. But although the legal proceeding twice went before the U.S. Supreme Court, in 1928 and 1934, he was unsuccessful in overturning the decision.

In response to the second Supreme Court decision upholding de Forest as the inventor of regeneration, Armstrong attempted to return his 1917 IRE Medal of Honor, which had been awarded "in recognition of his work and publications dealing with the action of the oscillating and non-oscillating audion". However, the organization's board refused to let him, and issued a statement that it "strongly affirms the original award".

Superheterodyne Circuit

The United States entered into World War I in April 1917, and later that year Armstrong was commissioned as a Captain in the U.S. Army Signal Corps,

and assigned to a laboratory in Paris, France to help develop radio communication for the Allied war effort. He returned to the United States in the fall of 1919, after being promoted to the rank of Major. (During both world wars, Armstrong gave the U.S. military free use of his patents.)

During this period Armstrong's most significant accomplishment was the development of a "supersonic heterodyne" - soon shortened to "superheterodyne" - radio receiver circuit. This circuit made radio receivers more sensitive and selective and is still extensively used today. The key feature of the superheterodyne approach is the mixing of the incoming radio signal with a locally generated, different frequency signal within a radio set. This circuit is typically referred to as the mixer. The end result is a fixed, unchanging intermediate frequency, or I.F. signal which is more easily amplified and detected by subsequent circuit stages that follow the mixer. In 1919, Armstrong filed an application for a U.S. patent of the superheterodyne circuit which was issued the next year. This patent was subsequently sold to Westinghouse. The patent would be challenged, however, triggering yet another patent office interference hearing. Armstrong ultimately lost this patent battle; although the outcome was less controversial than that involving the regeneration proceedings.

The challenger was Lucien Lévy of France who had also worked developing Allied radio communication during World War I. He had been awarded French patents in 1917 and 1918 that covered some of the same basic ideas used in Armstrong's superheterodyne receiver. AT&T, which was interested in radio development at this time, primarily for point-to-point extensions of its wired telephone exchanges, purchased the U.S. rights to Lévy's patent and contested Armstrong's grant. The subsequent court reviews continued until 1928, when the District of Columbia Court of Appeals disallowed all nine claims of Armstrong's patent,

Armstrong and his new wife Esther Marion MacInnis in Palm Beach in 1923. The radio is a portable superheterodyne that Armstrong built as a present for her.



assigning priority for seven of the claims to Lévy, and one each to Ernst Alexanderson of General Electric and Burton W. Kendall of Bell Laboratories.

Although most early radio receivers used regeneration Armstrong approached RCA's David Sarnoff, whom he had known since giving a demonstration of his regeneration receiver in 1913, about the corporation offering superheterodynes as a superior offering to the general public. (The ongoing patent dispute was not a hindrance, because extensive cross-licensing agreements signed in 1920 and 1921 between RCA, Westinghouse and AT&T meant that Armstrong could freely use the Lévy patent.) Superheterodyne sets were initially thought to be prohibitively complicated and expensive as the initial designs required multiple tuning knobs and used nine vacuum-tubes. However, in conjunction with RCA engineers, Armstrong developed a simpler, less costly design. RCA introduced its superheterodyne Radiola sets in the U.S. market in early 1924, and they were an immediate success, dramatically increasing the corporation's profits. These sets were considered so valuable that RCA would not license the superheterodyne to other U.S. manufacturing companies until 1930.

Super-regeneration circuit

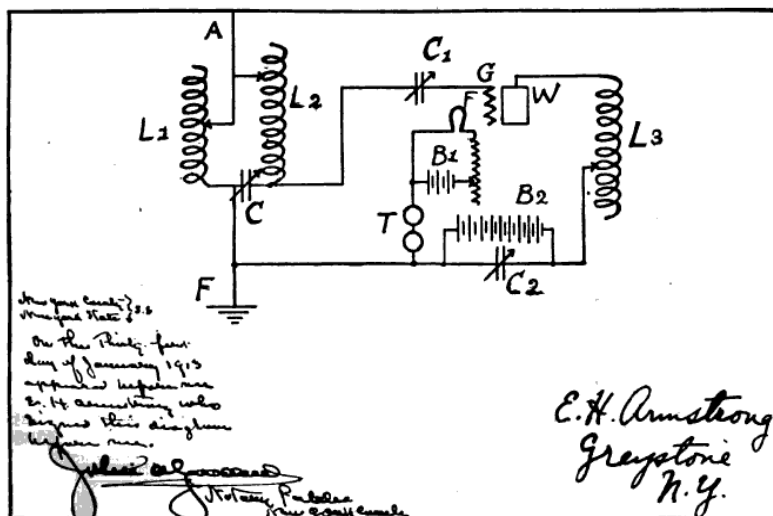
The regeneration legal battle had one serendipitous outcome for Armstrong. While he was preparing apparatus to counteract a claim made by a patent attorney, he "accidentally ran into the phenomenon of super-regeneration", where, by rapidly "quenching" the vacuum-tube oscillations, he was able to achieve even greater levels of amplification. A year later, in 1922, Armstrong sold his super-regeneration patent to RCA for \$200,000 plus 60,000 shares of corporation stock, which was later increased to 80,000 shares in payment for consulting services. This made Armstrong RCA's largest shareholder, and he noted that "The sale of that invention was to net me more than the sale of the regenerative circuit and the superheterodyne combined". RCA envisioned selling a line of super-regenerative receivers until superheterodyne sets could be perfected for general sales, but it turned out the circuit was not selective enough to make it practical for broadcast receivers.

Wide-band FM Radio

"Static" interference, extraneous noises caused by sources such as thunderstorms and electrical equipment, bedeviled early radio communication using amplitude modulation (AM) and perplexed numerous inventors attempting to eliminate it. Many ideas for static elimination were investigated, with little success. In the mid-1920s, Armstrong began researching whether he could come up with a solution. He initially, and unsuccessfully, attempted to resolve the problem by modifying the characteristics of existing AM transmissions.

One approach considered as a potential solution had been the use of frequency modulation (FM) transmissions, where, in order to encode audio, instead of varying ("modulating") the amplitude (strength) of a radio signal, as was done for AM transmissions, the frequency was varied. However, in 1922 John Renshaw Carson of AT&T, inventor of Single-sideband modulation (SSB), had published a Proceedings of the IRE paper which included a detailed mathematical analysis which showed that FM transmissions did not provide any improvement over AM. Although the Carson bandwidth rule for FM is still important today, this review turned out to be incomplete, because it reviewed only what is now known as "narrow-band" FM.

THE ORIGINAL DRAWING OF THE FEED-BACK CIRCUIT WHICH
LARGELY DETERMINED THE COURT IN ARMSTRONG'S FAVOR



*Armstrong's "feed back" circuit drawing,
from Radio Broadcast vol. 1 no. 1 1922.*

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In early 1928 Armstrong began researching the capabilities of frequency modulation. Although there were few others involved in FM research at this time, he did have knowledge of a project being conducted by RCA engineers, who were investigating whether FM shortwave transmissions were less susceptible to fading than AM. In 1931 these engineers constructed a successful FM shortwave link transmitting the Schmeling-Stribling fight broadcast from California to Hawaii, and noted at the time that the signals seemed to be less affected by static, but the project made little further progress.

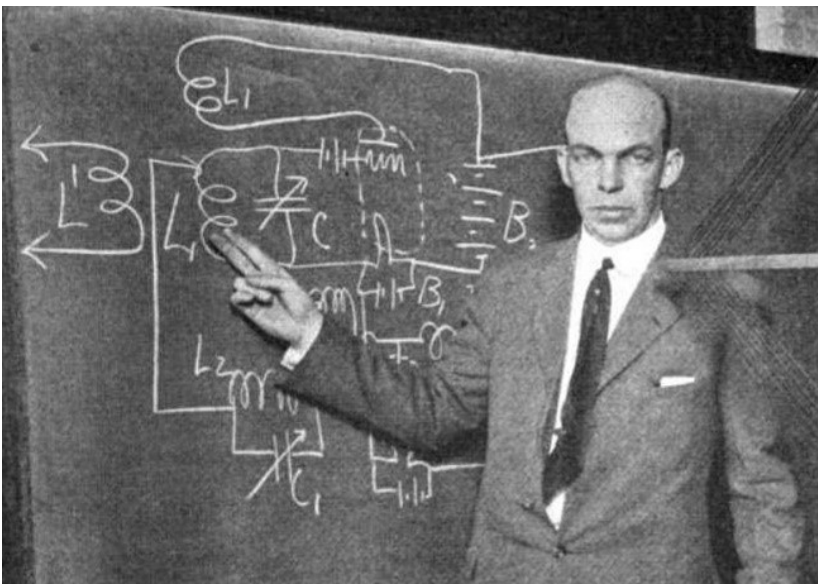
Working in secret in the basement laboratory of Columbia's Philosophy Hall, Armstrong slowly developed what eventually resulted in wide-band FM, in the process discovering significant advantages over the earlier "narrow-band" FM transmissions. He was granted five U.S. patents covering the basic features of new system on December 26, 1933. Initially, the primary claim was that his FM system was effective at filtering out the noise produced in receivers by vacuum tubes.

Armstrong had a standing agreement to give RCA the right of first refusal to his patents. In 1934 he made a presentation of his new system to RCA president Sarnoff. Sarnoff was somewhat taken aback by its complexity, as he had hoped it would be possible to eliminate static merely by adding a simple device to existing receivers. From May 1934 until October 1935 Armstrong conducted field tests of his FM

technology from an RCA laboratory located on the 85th floor of the Empire State Building in New York City. An antenna attached to the building's spire transmitted signals for distances up to 80 miles (130 km). These tests helped demonstrate FM's static-reduction and high-fidelity capabilities. However RCA, which was heavily invested in perfecting television broadcasting, chose not to invest in FM, and instructed Armstrong to remove his equipment.

Denied the marketing and financial clout that RCA would have brought, Armstrong decided to finance his own development and form ties with smaller members of the radio industry, including Zenith and General Electric, to promote his invention. Armstrong thought that FM had the potential to replace AM stations within 5 years, which he promoted as a boost for the radio manufacturing industry, then suffering from the effects of the Great Depression, since making existing AM radio transmitters and receivers obsolete would necessitate that stations buy replacement transmitters and listeners purchase FM-capable receivers. In 1936 he published a landmark paper in the Proceedings of the IRE that documented the superior capabilities of using wide-band FM. (This paper would be reprinted in the August 1984 issue of Proceedings of the IEEE.) A year later, a paper by Murray G. Crosby (inventor of Crosby system for FM Stereo) in the same journal provided further analysis of the wide-band FM characteristics, and introduced the concept of "threshold", demonstrating that there is a superior signal to noise ratio when the signal is stronger than a certain level.

In June 1936, Armstrong gave a formal presentation of his new system at the U.S. Federal Communications Commission (FCC) headquarters in Washington, D.C. For comparison, he played a jazz record using a conventional AM radio, then switched to an FM transmission. A United Press correspondent was present, and recounted in a wire service report that: "if the audience of 500 engineers had shut their eyes they would have believed the jazz band was in the same room. There were no extraneous sounds." Moreover, "Several engineers said after the demonstration that they consider Dr. Armstrong's invention one of the most important radio developments since the first earphone crystal sets were introduced." Armstrong was quoted as saying he



could "visualize a time not far distant when the use of ultra-high frequency wave bands will play the leading role in all broadcasting", although the article noted that "A switchover to the ultra-high frequency system would mean the junking of present broadcasting equipment and present receivers in homes, eventually causing the expenditure of billions of dollars."

In the late 1930s, as technical advances made it possible to transmit on higher frequencies, the FCC investigated options for increasing the number of broadcasting stations, in addition to ideas for better audio quality, known as "high-fidelity". In 1937 it introduced what became known as the Apex band, consisting of 75 broadcasting frequencies from 41.02 to 43.98 MHz. As on the standard broadcast band these were AM stations, but with higher quality audio - in one example, a frequency response from 20 Hz to 17,000 Hz +/- 1 dB - because station separations were 40 kHz instead of the 10 kHz spacings used on the original AM band. Armstrong worked to convince the FCC that a band of FM broadcasting stations would be a superior approach. That year he financed the construction of the first FM radio station, W2XMN (later KE2XCC) at Alpine, New Jersey. FCC engineers had believed that transmissions using high frequencies would travel little farther than line-of-sight distances, limited by the horizon. However, when operating with 40 kilowatts on 42.8 MHz, the station could be clearly heard 100 miles (160 km) away, matching the daytime coverage of a full power 50-kilowatt AM station.

FCC studies comparing the Apex station transmissions with Armstrong's FM system concluded that his approach was superior. In early 1940, the FCC held hearings on whether to establish a commercial FM service. Following this review, the FCC announced the establishment of an FM band effective January 1, 1941, consisting of forty 200 kHz-wide channels on a band from 42-50 MHz, with the first five channels reserved for educational stations. Existing Apex stations were notified that they would not be allowed to operate after January 1, 1941 unless they converted to FM.

Although there was interest in the new FM band by station owners, construction restrictions that went into place during World War II limited the growth of the new service. Following the end of World War II, the FCC moved to standardize its frequency allocations. One area of concern was

the effects of tropospheric and Sporadic E propagation, which at times reflected station signals over great distances, causing mutual interference. A particularly controversial proposal, spearheaded by RCA, was that the FM band needed to be shifted to higher frequencies in order to avoid this potential problem. This reassignment was fiercely opposed as unneeded by Armstrong, but in the end he lost. The FCC made its decision final on June 27, 1945. It allocated one hundred FM channels from 88-108 MHz, and assigned the former FM band to 'non government fixed and mobile' (42-44 MHz), and television channel 1 (44-50 MHz), curiously now sidestepping the interference concerns. A period of allowing existing FM stations to broadcast on both low and high bands ended at midnight on January 8, 1949, at which time any low band transmitters had to be shut down, officially making obsolete 395,000 receivers that had already been purchased by the public for the original band. Although converters allowing low band FM sets to receive high band were manufactured, they ultimately proved to be complicated to install, and often as (or more) expensive than buying a new high band set outright.

Armstrong felt the FM band reassignment had been inspired primarily by a desire to cause a disruption that would limit FM's ability to challenge the existing radio industry, including RCA's AM radio properties that included the NBC radio network, plus the other major networks including CBS, ABC and Mutual. The change was also thought to have been favored by AT&T, as the elimination of FM relaying stations would require radio stations to lease wired links from that company. Particularly galling was the FCC assignment of TV channel 1 to the 44-50 MHz segment of the old FM band. Channel 1 was later deleted, since periodic radio propagation would make local TV signals unviewable.

Although the FM band shift was an economic setback, there was still reason for optimism, and a book published in 1946 by Charles A. Siepmann heralded FM stations as "Radio's Second Chance". In late 1945, Armstrong contracted with John Orr Young, founding member of the public relations firm Young & Rubicam, to conduct a national campaign promoting FM broadcasting, especially by educational institutions. Article placements promoting both Armstrong personally and FM were made with general circulation publications

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including *The Nation*, *Fortune*, *The New York Times*, *Atlantic Monthly*, and *The Saturday Evening Post*.

In 1940, RCA offered Armstrong \$1,000,000 for a non-exclusive, royalty-free license to use his FM patents. But he refused this offer, primarily because he felt this would be unfair to the other licensed companies, which had to pay 2% royalties on their sales. Over time this impasse with RCA would come to dominate Armstrong's life. RCA countered by conducting its own FM research, eventually developing what it claimed was a non-infringing FM system. The corporation also encouraged other companies to stop paying royalties to Armstrong. Outraged by this turn of events, in 1948 Armstrong filed suit against RCA and the National Broadcasting Company, accusing them of patent infringement and that they had "deliberately set out to oppose and impair the value" of his invention, for which he requested treble damages. Although he was confident that this suit would be successful and result in a major monetary award, the protracted legal maneuvering that followed eventually began to impair his finances, especially after his primary patents expired in late 1950.

FM Doppler Radar

During World War II, Armstrong turned his attention to investigations of continuous wave FM Doppler radar funded by government contracts. The relative slowness of FM radar, compared with the AM pulse radar then in use, was offset by an enormous increment in range that became increasingly important with the advent of aircraft capable of traveling at supersonic speeds. Although the War ended before this technology could be applied, it subsequently became the method of choice. The first clear test of its utility in extremely long-range target detection was carried out on January 10, 1946, when the Army Signal Corps' Project Diana successfully reflected radar waves off the moon using a transmitter and receiver designed by Armstrong.

Personal life

In 1923, combining his love for high places with courtship rituals, Armstrong climbed the WJZ (now WABC) antenna located atop a

twenty-story building in New York City, where he reportedly did a handstand, and when a witness asked him what motivated him to "do these damnfool things", Armstrong replied "I do it because the spirit moves me." Armstrong had arranged to have photographs taken, which he had delivered to David Sarnoff's secretary, Marion MacInnis. Armstrong and MacInnis married later that year. Armstrong bought a Hispano-Suiza motor car before the wedding, which he kept until his death, and which he drove to Palm Beach, Florida for their honeymoon. A publicity photograph was made of him presenting Marion with the world's first portable superheterodyne radio as a wedding gift.

He was an avid tennis player until an injury in 1940, and drank an Old Fashioned with dinner. Politically, he was described by one of his associates as "a revolutionist only in technology - in politics he was one of the most conservative of men."

Death

Bitter and overtaxed by years of litigation and mounting financial problems, Armstrong lashed out at his wife one day with a fireplace poker, striking her on the arm. She left their apartment to stay with her sister, Marjorie Tuttle, in Granby, Connecticut.

Sometime during the night of January 31-February 1, 1954, with his wife in Connecticut and three servants having left for the day, Armstrong removed the air conditioner from a window in his twelve-room apartment on the thirteenth-floor of River House in Manhattan, New York City, and jumped to his death. His body—fully clothed, with a hat, overcoat and gloves—was found in the morning on a third-floor balcony by a River House employee. The New

York Times described the contents of his two-page suicide note to his wife: "he was heartbroken at being unable to see her once again, and expressing deep regret at having hurt her, the dearest thing in his life." The note concluded, "God keep you and Lord have mercy on my Soul. David Sarnoff disclaimed any responsibility, telling Carl Dreher directly that "I did not kill Armstrong." After his death, a friend of Armstrong estimated that 90 percent of his time was spent on



litigation against RCA. U.S. Senator Joseph McCarthy (R-Wisconsin) reported that Armstrong had recently met with one of his investigators, and had been "mortally afraid" that secret radar discoveries by him and other scientists "were being fed to the Communists as fast as they could be developed". Armstrong was buried in Locust Grove Cemetery, Merrimac, Massachusetts.

Legacy

Following her husband's death, Marion Armstrong took charge of pursuing his estate's legal cases. In late December 1954, it was announced that through arbitration an out-of-court settlement of "approximately \$1,000,000" had been made with RCA. Dana Raymond of Cravath, Swaine & Moore in New York served as counsel in that litigation. Marion Armstrong was able to formally establish Armstrong as the inventor of FM following protracted court proceedings over five of his basic FM patents, with a series of successful suits, which lasted until 1967, against other companies that were found guilty of infringement.

It wasn't until the 1960s that FM stations in the United States started to challenge the popularity of the AM band, helped by the development of FM stereo by General Electric. Armstrong's FM system was also used for communications between NASA and the Apollo program astronauts. (He is of no known relation to Apollo astronaut Neil Armstrong.)

Armstrong has been called "the most prolific and influential inventor in radio history". The superheterodyne process is still extensively used by radio equipment. Eighty years after its invention, FM technology has started to be supplemented, and in some cases replaced, by more efficient digital technologies. The introduction of digital television eliminated the FM audio channel that had been used by analog television, HD Radio has added digital sub-channels to FM band stations, and, in Europe and Pacific Asia, Digital Audio Broadcasting bands have been created that will, in some cases, eliminate existing FM stations altogether. However, FM broadcasting is still used internationally, and remains the dominant system employed for audio broadcasting services.

Honours

In 1917, Armstrong was the first recipient of the IRE's (now IEEE) Medal of Honor.

For his wartime work on radio, the French government gave him the Legion of Honor in 1919. He was awarded the 1941 Franklin Medal, and in 1942 received the AIEEs Edison Medal "for distinguished contributions to the art

of electric communication, notably the regenerative circuit, the superheterodyne, and frequency modulation." The ITU added him to its roster of great inventors of electricity in 1955.

He later received two honorary doctorates, from Columbia in 1929, and Muhlenberg College in 1941.

In 1980, he was inducted into the National Inventors Hall of Fame, and appeared on a U.S. postage stamp in 1983. The Consumer Electronics Hall of Fame inducted him in 2000, "in recognition of his contributions and pioneering spirit that have laid the foundation for consumer electronics." Columbia University established the Edwin Howard Armstrong Professorship in the School of Engineering and Applied Science in his memory.

Armstrong Hall at Columbia was named in his honor. The hall, located at the northeast corner of Broadway and 112th Street, was originally an apartment house but was converted to research space after being purchased by the university. It is currently home to the Goddard Institute for Space Studies, a research institute dedicated to atmospheric and climate science that is jointly operated by Columbia and the National Aeronautics and Space Administration. A storefront in a corner of the building houses Tom's Restaurant, a longtime neighborhood fixture that inspired Susanne Vega's song "Tom's Diner" and was used for establishing shots for the fictional "Monk's diner" in the "Seinfeld" television series.

A second Armstrong Hall, also named for the inventor, is located at the United States Army Communications and Electronics Life Cycle Management Command (CECOM-LCMC) Headquarters at Aberdeen Proving Ground, Maryland.

And that, sadly... is the rest of this story.

Inventor of FM

Armstrong Writes Note To Wife, Dies in Plunge

Maj. Edwin H. Armstrong, sixty-three, inventor of frequency modulation (FM) and one of the nation's leading radio pioneers, plunged to death yesterday from his thirteenth-floor apartment at River House, 435 E. 52d St.

Maj. Armstrong was found, fully clothed to overcoat, hat and gloves, on a third-floor extension at 10:30 a. m. by Alfred Henrichs, building maintenance man. He had apparently been dead several hours.

Police found a two-page note to his wife, Mrs. Marion Armstrong, signed "Ed," in which he said it was "heartbreaking"



Click to enlarge

September 2018

September 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	For details on all SARC events, go to ve7sar.net For details on all SEPARS events, go to separ.shutterfly.com/calendar					1 08-1000 Club Social: Kalmar Family Restaurant King George Blvd & 81st Avenue CONTEST: All ASIAN DX
2 CONTEST: All ASIAN DX	3	4 1930 SEPAR Net 2000 SARC Net	5	6	7	8 08-1000 Club Social: Kalmar Family Restaurant CONTEST: WAE DX (SSB)
9 CONTEST: WAE DX (SSB)	10	11 1930 SEPAR Net 2000 SARC Net SARC FALL BASIC COURSE STARTS	12 1900 SARC General Meeting	13	14	15 08-1000 Club Social: Kalmar Family Restaurant CONTEST: All Africa International DX (CW) New Jersey, New Hampshire, Iowa QSO Parties (all modes)
16 CONTEST: All Africa International DX (CW) New Jersey, New Hampshire, Iowa QSO Parties (all modes)	17	18 1930 SEPAR Net 2000 SARC Net	19	20	21	22 08-1000 Club Social: Kalmar Family Restaurant
23/30 30th CONTEST: CQ WW DX (RTTY) Texas QSO Party (all modes)	24	25 1930 SEPAR Net 2000 SARC Net	26 SARC Exec Meeting	27	28	29 08-1000 Club Social: Kalmar Family Restaurant CONTEST: CQ WW DX (RTTY) Texas QSO Party (all modes)

Contest Details: <http://hornucopia.com/contestcal/contestcal.html>



Page 13—News You Can Lose

The Lighter Side of Amateur Radio

Zero Field Day Contacts Finishes Club

GOLDEN SPIKE, Montana - A group of northern Montana amateur radio operators is disbanding their ham radio club after their worst Field Day showing in 27 years.

The road to this year's Field Day was paved with potholes for the Gold Diggers Amateur Radio Club, as members endured heated confrontations, flying yeast rolls, overturned tureens of vegetable soup and ejection from two separate meeting locations - including a Catholic school altar guild room.

"To say we fell below expectations is putting it mildly," says former club president Lou Rodden. "The members were so absorbed with making sure we had plenty of food, lawn chairs and drinks that we forgot to bring our radio gear."

"It was NOT my job to bring the gear," replied club member Junior Brown, when questioned by Ham Hijinks. Brown was chided repeatedly after forgetting to order food for last year's Field Day.

"I may have overlooked the food then... but I would never forget the radio gear. Knuckleheads!"

Immediately after Field Day, president Rodden called a meeting of club officers. The group voted to disband the club effective July 1.

"Ain't nowhere to go but up!" said Rodden, who adds that he is now thinking about joining the Jackson Hole, Wyoming, "Jack-A-Lopes" contest club. "I even heard of one club in Arkansas that stopped operating at midnight so they could drink a pint of Fosters! That's my kind of club!"

Dr. Johnson Longville, Contest and Promotion Outreach Director at the National Radio Retransmission Legion (NRRL), says this is the first time a radio-less Field Day has happened.

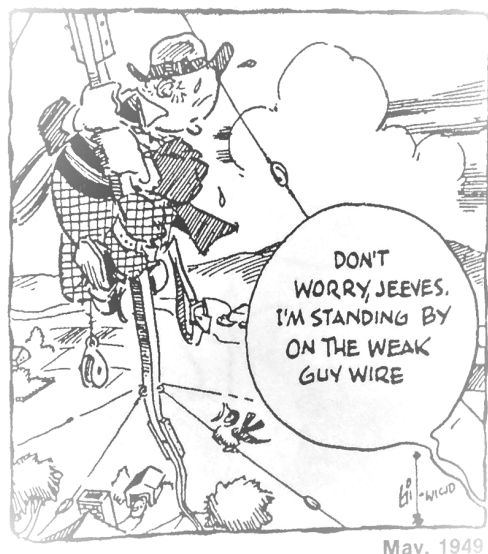
"I can't remember another group submitting 'zero' contacts on their log before. I'm a little surprised the Gold Diggers even submitted a log. Oh, we've had plenty of 'two's and three's' before, usually due to radio failures or RF hash from a generator. But not because the entire club forgot to bring gear."

By WBØRUR, on the scene

~ Ham Hijinks

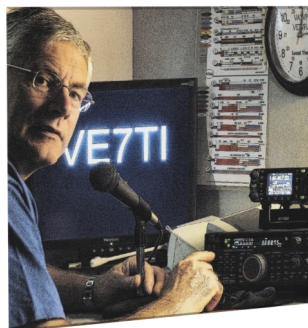


Club member Robert Willingham checks the group's bylaws for info on how to disband the club.



May, 1949

September 2018



Back to Basics

John Schouten VE7TI

From The Canadian Basic Question Bank

Keeping Out Of Trouble—Part 2

Last issue, we looked at some examples of the legalities, staying within the terms of your Amateur Radio license. This month, part 2 of that article. For our foreign readers, the following pertains to the Canadian Radiocommunications Regulations. The rules may vary in your country.

Summary Of The IC Regulations (continued)

47. A transmission that disturbs other communications is called harmful interference. You are not allowed to disturb another station's communications.
48. In the event of interference to a neighbor's radio receiver, stereo, VCR, TV set or other "radio sensitive equipment" capable of receiving RF signals, if the field strength of the amateur station is below 1.83 volts per meter, it will be deemed that the affected equipment's lack of immunity is the cause, however if the field strength of the amateur station exceeds 1.83 volts per meter, it will be deemed that the amateur's transmission is the cause of the problem.

49. Radio-sensitive equipment is considered to be "any device, machinery or equipment, other than radio apparatus, the use or functioning of which is, or can be, adversely affected by radiocommunications emissions". These may include electronic organs, microwave ovens, furnace controllers and a host of other non-radio type of equipment.

50. Where interference to the reception of radiocommunications is caused by the operation of an amateur station, the Minister may require that necessary steps for the prevention of the interference be taken by the radio amateur.
51. If regulations say that the amateur service is a secondary user of a frequency band, and another service is a primary user, this means amateurs are allowed to use the frequency band only if they do not cause interference to primary users. Two of the bands where the amateur service is secondary users are 440.0 to 450.0 MHz and 902 to 928 MHz.

There are several other bands above these lowest two where the radio amateur has secondary user status. See [Schedule 1 of RIC-2](#) later for the other bands.

52. If two amateur stations want to use the same frequency at the same time, it should be remembered that both station operators have an equal right to operate on the frequency and some arrangement should be worked out to avoid conflict.
53. Out of band operations is not allowed by any amateur radio operator.
54. A radio amateur may not operate, or permit to be operated, a radio apparatus, which he knows is not performing to the Radiocommunication Regulations tolerances.
55. A person may operate or permit the operation of a radio apparatus only where the apparatus is maintained to the Radiocommunication Regulations tolerances. These standards are the performance standards set by Industry Canada regulations and policies.

*Yes, you too **can** pass the Basic exam!*



56. No person shall possess or operate any device, for the purpose of amplifying the output power of a licence-exempt radio apparatus.
57. A person may operate an amateur radio station when the person complies with the Standards for the Operation of Radio Stations in the Amateur Radio Service.
58. While in Canada, the station licensed by the government of the United States shall identify his station by:
 - By transmitting the call sign assigned by the FCC.
 - By adding to his call sign the Canadian call sign prefix for the geographic location of the station.
 - By radiotelephone, adding to the call sign the word "portable" or "mobile" or by radio telegraphy adding the oblique character /.
59. When communicating with a foreign country, only messages of a technical nature or personal remarks of relative unimportance should be sent.
60. Amateur radio communication should only be of a technical or personal nature. You are not allowed to:
 - Conduct business planning on amateur radio.
 - Broadcast information to the general public.
 - Send false or deceptive messages.
 - Retransmit music or signals originating from a non-amateur station.
 - Originate music or other broadcast type signals from an amateur station.
 - Use secret codes in order to obscure the meaning of a message.
 - Transmit superfluous signals of any nature.
 - o Transmit profane or obscene language or messages.
 - You are not allowed to divulge any radio communications unless it is from a broadcast station or another amateur radio station.
61. No person shall send or cause to be sent a false, fraudulent or deceptive signal. Such as MAYDAY when no such emergency exists.
62. No person shall decode an encrypted subscription programming signal without permission of the lawful distributor.
63. No person shall, without lawful excuse, interfere with or obstruct any radio communication.
64. A person found guilty of transmitting a false or fraudulent distress signal, or interfering with, or obstructing any radio communication, without lawful cause, may be liable, on summary conviction, to a penalty of a fine, not exceeding \$25,000, or a prison term, or both.
65. The holder of a radio authorization shall, at the request of a duly appointed radio inspector, show that radio authorization, or a copy thereof, to the inspector, within 48 hours of the request.
66. A duly appointed radio inspector may request to inspect a radio station. The person in charge of a place entered by a radio inspector shall give the inspector information that the inspector requests. Where entry is refused, and it is necessary to perform his duties under the Act:
 - A radio inspector may obtain a warrant.
 - In executing a warrant, a radio inspector shall not use force, unless accompanied by a peace officer, and force is authorized.
67. The Minister may suspend a radio authorization, upon notice and with the opportunity to make representation thereto:
 - Where the authorization was obtained through misrepresentation.
 - Where the holder has contravened the Act or Regulations.
 - Where the holder has contravened the terms and conditions of the radio authorization.
68. The minister may suspend or revoke a radio authorization WITHOUT NOTICE where the holder has failed to comply with a request to pay fees or interest due.
69. The following one-way communications are authorized in the amateur service:

September 2018

- Telecommands to model craft on all amateur bands above 30 MHz.
 - Brief transmissions to make adjustments to the station below 30 MHz.
 - Morse code practice.
 - A beacon station in the amateur radio service.
70. Any abbreviation may be used as long as it doesn't obscure the meaning of the communication.

Exceptions from penalties under the Radiocommunications Act

1. The following are exceptions from penalties under the Radiocommunication Act:
 - Where it is for the purpose of preserving or protecting property, or for the prevention of harm to a person.
 - Where it is for the purpose of giving evidence in a criminal or civil proceeding in which persons are required to give evidence.
 - Where it is on behalf of Canada, for the purpose of international or national defense or security.
2. Amateur radio stations may communicate with any station involved in a real or simulated emergency.
3. In the amateur radio service, business communications are only permitted if they are for the safety of life or immediate protection of property.
4. If you hear an unanswered distress signal on an amateur band you should offer assistance.
5. In the amateur radio service, it is permissible to broadcast radio communications required for the immediate safety of life of individuals or the immediate protection of property.
6. An amateur radio station in distress may use any means of radiocommunications.
7. During a disaster, an amateur station may make transmissions necessary to meet essential communications needs and assist

relief operations when normal communication systems are overloaded, damaged or disrupted.

8. During an emergency, there are no limitations to an amateur radio stations output power.
9. During a disaster, most communications are handled by nets, using predetermined frequencies in the amateur bands. Operators not directly involved with disaster communications are requested to avoid making unnecessary transmissions on or near frequencies being used for disaster communications.
10. Messages from recognized public service agencies may be handled by amateur radio stations during peace time and civil emergencies and exercises.
11. It is permissible to interfere with the working of another station if your station is directly involved with a distress situation.

Charges/Fees

1. The operator of an amateur station shall not accept nor demand any remuneration in any form, in respect of a radiocommunications that the person transmits or receives.
2. There are no fees associated with the issuing of your Amateur Radio Operator Certificate or any of you upgrades, or the issuing of a new call sign if you move to another province or your Amateur Radio Operator Certificate is lost or destroyed.

Examinations

1. The fee for taking an examination given by an accredited examiner is to be negotiated between the accredited examiner and the candidate.
2. The fee for taking examinations at Industry Canada is \$20 per qualification.
3. An accredited examiner must hold the Amateur Radio Operator Certificate with Basic, 5 w.p.m. and Advanced qualifications.
4. Examinations for disabled candidates may be given orally, or tailored to the candidate's ability to complete the examination.

5. A disabled candidate must pass a normal radio amateur certificate examination before being granted any qualification.

Station Identification

1. An amateur radio station must use his call sign to identify his station at the start and the end of a communications with another station and at intervals no greater than 30 minutes during an ongoing communication.
2. You must use your call sign to identify your station. There is no requirement to use the other station's call sign in your communications. Each station must transmit its own call sign.
3. The only exception for not using your call sign is when the transmission is telemetry, digital or similar type of transmission to a radio control model. These types of transmissions are only allowed on amateur bands above 30 MHz.
4. Call signs are to be sent in English or French, either one of Canada's two official languages.

Third Party Communications

Amateur third party communications is the transmission of non-commercial or personal messages to or on behalf of a third party. These are messages sent to a non-amateur via an amateur station.

1. A message originating from the Canadian Forces Affiliated Radio Service (CFARS) or the United States Military Radio System (MARS) are not considered to be third party messages, even though the messages originated from a non-amateur.
2. A person operating a Canadian amateur station is forbidden to communicate with amateur stations of another country when that country has informed the International Telecommunication Union that it objects to such communications.
3. International communications on behalf of third party may be transmitted by an amateur station only if the countries concerned have authorized such communications.
4. If a non-amateur friend is using your station under your control and supervision to talk to someone in Canada, and a foreign station breaks in to talk to your friend, you must ask your friend to wait until you find out if Canada has a third party agreement with the foreign station's government.

Antenna/Tower Installations:

Antenna structures have become a concern in many communities and as a result are regulated by various authorities in communities across Canada. Concerns can also be raised by neighbors, and their concerns should also be considered when planning antenna or tower installations. Gone are the days when we could do basically what we want to do.

Antennas are classified as two types as far as their physical structures and locating are concerned and as a result, different rules apply.

- Type 1 (site specific) antennas are the large broadcasting structures
- Type 2 (non-site specific) are the structures that amateur radio stations install.

Industry Canada is not normally involved with Type 2 structures but local land-use authorities and your neighbors may be of concern to you. You should contact both your local land-use authority and your neighbors before any antenna installation, and if you fail to do so, you must accept any consequences for your actions.

The following statements cover all the questions on this subject in the Basic Question Bank.

1. There is no requirement to receive prior approval from Industry Canada to construct an antenna or its structure.
2. Prior to an installation of an antenna or structure, for which community concerns could be raised, radio amateurs should consult with their land-use authority.
3. Industry Canada expects radio amateurs to address community concerns in a responsible manner and to consider land-use authority requests.
4. If a radio amateur erects an antenna structure without consulting the land-use authority, he/she must accept any consequences.
5. For the purpose of environmental filing, amateur stations are considered to be Type 2 (non-site specific).

There you have it, in capsule form.

~ 73, John VE7T



At The Last SARC Meeting

Annual General Meeting Minutes

Wednesday, June 13, 2018

Location: Emergency Management BC

The 2017/2018 Annual General Meeting of the Surrey Amateur Radio Club (held at the Emergency Management BC Offices/PREOC) was called to order at 7:10pm on June 13, 2018 by President Stan Williams VA7NF. 24 members were in attendance.

Welcome

Stan welcomed everyone to the AGM and confirmed a quorum was present. The agenda for the meeting was presented. John Schouten VE7TI moved that we approve the agenda (seconded by Jinty Reid VA7JMR); motion carried.

2017 AGM Minutes:

Stan had prepared copies of the 2017 AGM minutes which were made available for inspection. Secretary, Jeremy Morse VE7TMY, confirmed they were the minutes he prepared last year.

Stan confirmed everyone in attendance who has paid for the 2018/19 year had a voting card for the election.

Stan moved that the 2017 AGM Minutes be approved. Motion carried.

Announcements

- Email received from Dave Thompson VA7THO to say that he regrets he is unable to attend meetings due to not being mobile.
- Email from Bill Gipps VE7XS who was unable to attend but willing to stand for re-election if needed.
- Jay Melvin VE7KC advised that

regrettably his mother in-law Verna Hansen KB6DHC passed away last week. Condolences were offered to Jay.

- John Schouten VE7TI provided an overview of the Surrey Doors Open event held at the OTC. More detailed information can be found on our blog site and SARC Newsletter.
<https://ve7sar.blogspot.com/>
- Jay Melvin VE7KC warned those using MARS (Military Aux Radio System) use computers not connected to the Internet for [MARS] operation. More details can be found on these links:
<http://www.arrrl.org/news/mars-urging-members-to-use-computers-that-are-isolated-from-the-internet>
<https://www.eham.net/articles/41393>

Audited Financial Statements

In the absence of Treasurer, Scott Hawrelak VE7HA, John Brodie VA7XB presented audited financial statements including a Balance Sheet and Income Statement prepared by Pam Hamilton VE7PFH. Stan Williams moved for the approval of the financial statements. Carried.

Committee Reports

OTC

John Brodie VA7XB provided a summary of activities for the last year at the OTC and noted that we have fully spent all the Gaming Grant and OTC funds so any further OTC expenses will need to come out of general funds. We have now all the major items budgeted for this year i.e. Flex 6600, ICOM IC-7610 and a SPE 1.5kW Linear

Amplifier and antenna rotator. Additional items purchased included monitors for the computers, battery charger, new coax throughout.

Many items were donated, including office furniture and radio equipment. A few surplus items will be put up for auction soon. We have full Internet now with a VPN account. Further work is needed on the beam and wire antenna in the near future. A call for volunteers during the summer will be made.

Another Gaming Grant application will be prepared and submitted in July/Aug to fulfill the objective of having 3 modern stations. The OTC Committee will help select the next items for our application after Field Day and RAC Canada Day Contest (the latter hosted at the OTC).

Lots of help was provided by members who put in many volunteer hours. John would like to thank all those that have helped set up the OTC this year. Stan Williams calls for a round of applause and thank you to John for all the work he's done as chairperson of OTC Committee.

Emergency Communications Sub-Committee

Stan announced a new sub-committee to focus on VHF/UHF emergency communication, to replace the SEPAR Society which will likely be wound up at the SEPARS AGM. Don Hamilton VA7GL has agreed to head this sub-committee.

Contesting

Now that long-awaited new equipment has recently been made available, a big effort should be made in the Fall season to get the training programs back on track.

Advanced Course

Stan Williams advised that he is considering offering an Advanced Course in the future for those that have a Basic License.

New and other business

Equipment Auction

Sheldon Ward VA7XNL presented a demo of the on-line auction site that is being prepared. <http://va7.ca/bids> You need to setup your own account if you want to bid on items. Sheldon ran through the bid process. Keep an eye out for an email about this in the near future.

--- Break for Coffee @7:45pm ---

Election of Directors

Directors whose 2 year terms expire include: Stan Williams, Bill Gipps, Jeremy Morse, Sheldon Ward. All

have offered to stand again including Bill (absent, but willing). Stan then recused himself from the proceedings and John Schouten VE7TI ran the election process.

1st call for nominations

Sheldon Ward nominated Anton James VE7SSD. Accepted

John Brodie nominated Michael Birtles VE7GMP. Accepted

John Brodie nominated Steve McLean VA7SXM (absent but proxy given to John Brodie)

2nd call for nominations

None

3rd call for nominations

Anton James nominated Kapila Jayaweera VE7KGK who declined

One proxy ballot from Robert Fishwick (absent) held by John Brodie.

Nominees were:

Stan Williams VA7NF, Jeremy Morse VE7TMY, Sheldon Ward VA7XNL, Anton James VE7SSD, Michael Birtles VE7GMP, Steve McLean VA7SXM (Absent)

Nominees presented brief statements about themselves and their nominations, and ballots were completed.

Ballots were scrutinized by John Schouten, Pam Hamilton, Kapila Jayaweera.

23 ballots were cast and there were no spoiled ballots.

The Directors elected were: Stan Williams, Jeremy Morse, Anton James, Michael Birtles

Kjeld Frederiksen VE7GP moved to destroy ballots. Seconded by Robert Gilchrist VE7CZV. John Schouten agreed to shred them after the meeting.

Thank You

Stan Williams expressed a thank you to the outgoing directors and welcome to the new directors elected this year. SARC will be hosting social meetings during the summer months at the OTC on the same Wednesdays at 7pm.

The next directors meeting will be called for 2 weeks from now : 7pm at the OTC at which time Officers will be elected.

Meeting Adjourned: 9:08pm

~ Jeremy VE7TMY

September 2018



Field Day 2018

Sheldon Ward VA7XNL

The 2018 ARRL Field Day was June 23-24th and for the second year in a row we had great weather.

Once again we were at the former Grandview Heights Elementary School yard. This is a good location providing a large area for our antennas and tents and it provides ample room for camping and other Field Day activities. The south side of the hill provides good RF propagation into the US and eastern Canada. Grid square: CN89PA19MJ.

Site setup started 24 hours in advance on Friday at 11 AM. Like 2017 we set up two tents and the SEPAR Comms trailer for our stations. This set up relatively quick compared to using one large tent for all the stations as has been done in the past. Both tents were set up in the central treed area preventing the tents from getting too hot during the day sun.

While the 2017 event was more social and included new radio operators with little

or no contest experience this year we decided to push more for points. We had 15 operators working SSB and CW. The three radios used included our new Icom 7610, Stan VA7NF's Flex 6700, and John VA7XB's Icom 7600. Unfortunately our new Flex 6600 wasn't quite ready to be used.

Just as in 2017 we operated a "3A" station. This means we had 3 radios and operated in the field with "emergency" AC generators as our main power source. Our "Big Foot" tower was set up with the TH-7 Yagi antenna at about 110' and providing 10, 15 and 20m bands. An off-center fed (OCF) wire providing 40 and 80m bands was run diagonally like last year, however we only used this for 80m as this year we setup a separate 40m antenna. Our 40m antenna was a 3 element "bob-tail curtain" facing east. Finally we setup a 160m inverted V antenna to provide an additional band that we haven't used before.





Cloverdale MLA Marvin Hunt



We made a successful satellite contact

September 2018



While we had more bands available this year and we did make contacts on all bands from 160m to 10m, actual band conditions weren't great. In 2017 we only had contacts on 4 bands (80, 40, 20, 15) so it was nice to add 2 more bands to that even though we had few contacts on the extra bands.

In addition to the HF bands listed we also made an amateur radio satellite contact thanks to John VE7TI. That one satellite contact provided bonus points equal to 50 phone QSOs.

This year we pushed more to get as many bonus points as we could. In total we had 1,450 bonus points submitted. This is much better than 2017 and helps to compensate for the poor band conditions and will make a huge difference in our final score.

For the first time we were able to post our score live over the internet at <http://cqcontest.net>. This allowed our general membership and anyone around the world to see how we were doing in real time as QSOs were logged. This site provides live contest scores (from those that participate) and I encourage you to check it out and participate when you are contesting.

This event could not have been a success without the help of many hands including the 2018 Field Day Committee members listed. The Committee members attended meetings in advance and put in hours planning, preparing and arranging equipment, food, transportation and more. Their efforts made this event, our biggest of the year, a real success.

Also a special thanks to those that helped with Friday and Saturday setup and Sunday take-down. We couldn't do this without your help.

We would like to hear from SARC members that attended about any problems they saw and could be improved for future Field Days. Please let myself or the directors know your thoughts. We will also have a discussion at a future monthly club meeting.

Once again I enjoyed being "in the field" for Field Day and hope we will do the same next year.

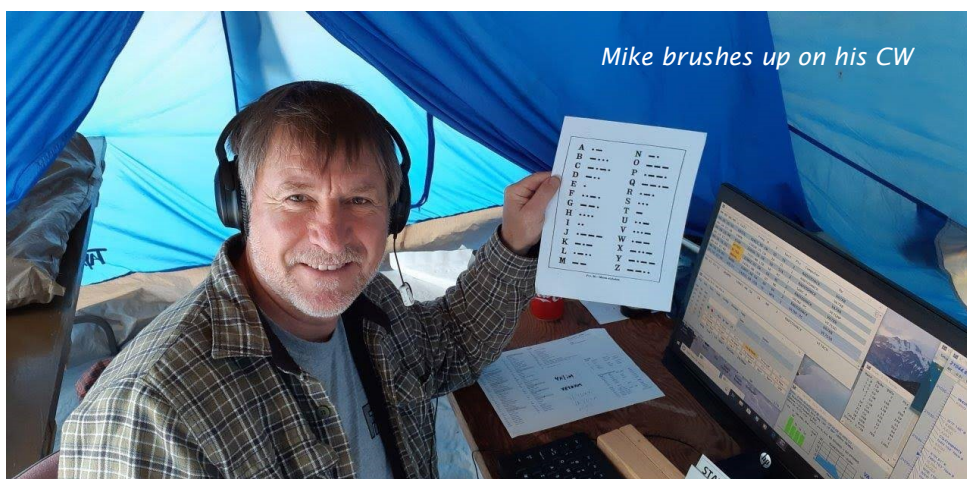
Our final score and ranking should be available on the ARRL website and in the December issue of QST magazine. And look for a review here shortly thereafter.

~ Sheldon VA7XH
SARC 2018 FD Chair

The result:

QSO Breakdown

Band	CW	Phone
160	2	4
80	148	19
40	170	21
20	276	145
15	87	17
10	0	3



Mike brushes up on his CW



2018 SARC FD Committee

Anton James VE7SSD

David Sinclair VA7DRS

Drew Elvins VA7DRW

Jason Biggin VA7ITJ

Jeremy Morse VE7TMY

Jinty Reid VA7JMR

John Brodie VA7XB

John Schouten VE7TI

Kapila Jayaweera VE7KGK

Michael Birtles VE7GMP

Nell Wrotniak VA7PE

Ralph Wrotniak VA7UB

Rob Farrell VE7UDT

Rob Fishwick VA7FMR

Roger Andrews VA7VH

Scott Hawrelak VE7HA

Sheldon Ward VA7XH

Stan Williams VA7NF

Steve McLean VE7SXM



September 2018

Operations & Training Centre News

John Brodie VA7XB

An Active Summer



The OTC report this month includes information normally submitted under “The Contest Contender”, for reasons which will become apparent.

It hasn’t been the usual quiet summer this year. We have succeeded in getting our new equipment running, tested and operating - and - enabling us to participate in no less than four contests: the RAC Canada Day contest, IARU (CW) contest, North American QSO Party (CW) and NAQP (SSB).

It is gratifying that we had a good turnout despite the demands of vacation time and family obligations. Participants are shown in the accompanying pics.

- John VE7TI
- Dave VA7DRS
- Michael VE7GMP
- Rob VE7CZV
- Elizabeth VA7ELA
- Sheldon VA7XNL
- Jan VA7VJ
- Slawa VE7LWW
- Les VA7OM
- John VA7XB
- Jason VA7ITJ
- Trevor VA7TCM

Amongst this large group were both newbies and seasoned operators, the former taking advantage of opportunities to learn from the latter and thereby improve proficiency.

There is nothing like an impending contest to provide the motivation for setting up and testing your gear, as

contests will soon reveal what does and doesn’t work, what accessories are needed to make the experience more productive and satisfying, and to identify problems that need fixing.

Need it be said that it is better to learn about deficiencies before radios and operator skills are thrust into a real emergency that allows no time for practice.

So what did we learn from the contest experience over the summer?

In addition to observing that many of us need to work on our operating skills, it was confirmed that we now have the makings of two first-rate stations, and a good notion of what is required to finish the job. The IC-7610 and its companion Expert Linear amplifier worked flawlessly, once the computer latency problem was remedied. The 7610, though a software defined radio (SDR), has been found to be user-friendly, with the basics easily learned with a few minutes of instruction. The linear amplifier appears to be “bullet proof”, once programmed to know the proper antenna to connect with and the internal tuner pre-tuned over the various bands.

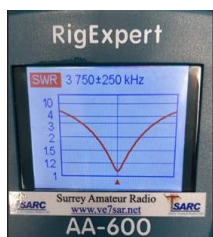
The Flex 6600 represented a larger challenge to initially set up but once that was done, the basics of operation are mastered rather quickly. After new operators get past the “intimidation” hurdle, the comfort level quickly increases. Fortunately, the critical settings of the Flex are by mostly by default so it is only the more sophisticated functions that require fiddling. One hurdle yet to be overcome



is to figure out the setup for voice keying of wav files with N1MM+ Logger, so that the operator does not have to verbally call CQ repeatedly when in "run" mode.

One significant equipment problem was identified: Whereas we are able, using the 10-15-20 triplexer, to have two radios operating simultaneously on different bands with the same antenna, we have a problem with the Dunestar 160-80-40 triplexer. This means that until it is resolved, only one radio at a time can be used with the wire antenna.

Here is the issue: Below is shown the SWR curve for the triplexer when testing with a 50 ohm dummy load. It can be seen that the SWR is over 3 at both low and high ends of the band, which means that the SWR is beyond the range of the radio's internal tuner. By contrast with the other triplexer used at Field Day, this unit contains no jumper to move the point of low SWR to one end of the band or the other. Inquiries to Dunestar about this problem have gone unanswered.

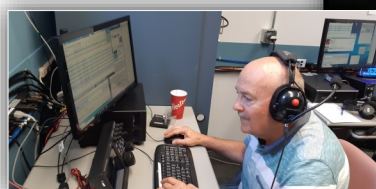
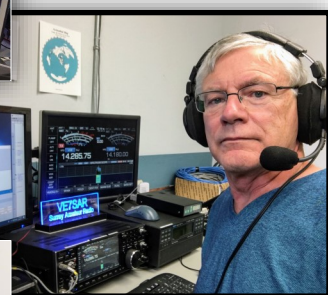
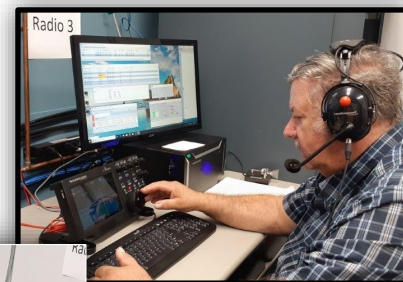


Since our triplexers are only good to 100 watts, it gives rise to the suggestion that current units be replaced with high power triplexers and bandpass filters. Perhaps also we should consider having separate 40 m and 80 m antennas, rather than the multi-band OCF dipole. Food for thought.

Other jobs to be done:

1. The yellow tower needs a power washing as it is dirty and the paint is peeling off the lower sections.
2. A visual enunciator should be installed in the radio room so that when the doorbell rings, it can be seen as well as heard (operators wearing headphones cannot always hear the bell).
3. Our room of donated items needs sorting to separate the valuable or saleable items from the disposable.

~ 73, John VA7XB



September 2018

The Contest Contender

John Brodie VA7XB

RAC Canada Day Contest



The highlight of the event was Michael's contact on 40 m with Bill Hosie ZS6CCY, located in Vaalwater, South Africa.

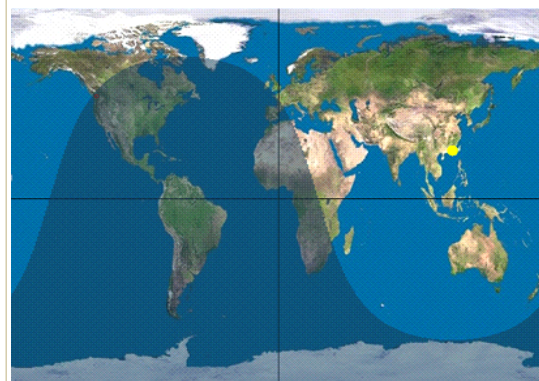
The 8 participating club members filled every available operating hour for this 24 hour contest. For Trevor VA7TCM it was his first contest opportunity but for others it was a chance to refine their skills and take part in an event where the quarry is Canadian stations. We found activity on 80,40 and 20 m using our new IC-7610 working into an Expert Linear amplifier and TH7 beam plus the recently-erected OCF dipole. Michael VE7GMP stayed through the night until about 5 am to make sure no opportunity for contacts was missed.

Band	Mode	QSOs	Pts	Sec	Pt/Q
3.5	CW	2	22	1	11.0
3.5	LSB	28	246	6	8.8
7	CW	9	78	4	8.7
7	LSB	26	188	4	7.2
14	CW	87	420	7	4.8
14	USB	202	1214	9	6.0
21	USB	1	2	0	2.0
Total	Both	355	2170	31	6.1

Score : 67.270

Operator	2	10	20	Tot	Acc
VA7FMR	8	21	5	34	34
VA7ITJ	7	14	0	21	55
VA7TCM	10	4	1	15	70
VA7VJ	29	17	5	51	121
VA7XB	36	10	1	47	168
VA7XNL	37	26	1	64	232
VE7GMP	21	26	5	52	284
VE7TI	47	24	0	71	355
Total	195	142	18	355	355

The highlight of the event was Michael's (VE7GMP) contact on 40 m with Bill Hosie ZS6CCY located in Vaalwater, South Africa. This was a textbook grey line contact, made between SARC's station at dusk and South Africa at dawn.



ZS6CCY was not in the contest but we couldn't resist the temptation to call him as he was loud and clear to us on the West Coast. Michael got him on the second try and put him down as contact serial number 001.

Information on ZS6CCY From the QRZ.com website



ZS6CCY was first licensed ZE1DX in 1970 in what was formerly Rhodesia. He trained in radiocommunication engineering and moved to Perth, Western Australia in 1981 as VK6ACY. He ran a successful radio networking business. His 30 year past-time of photographic safaris and canoeing, the Zambezi River, Lake Cahora Bassa-Mocambique, and the Okavango Delta, Botswana, led to full time game ranching in the Waterberg

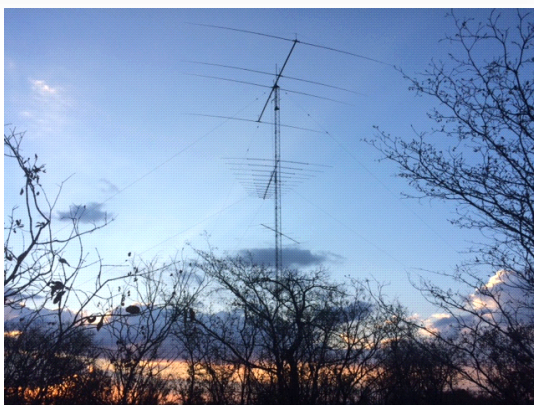
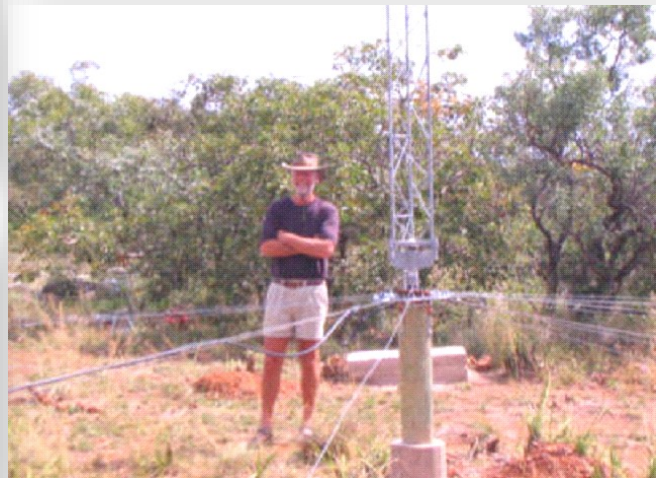
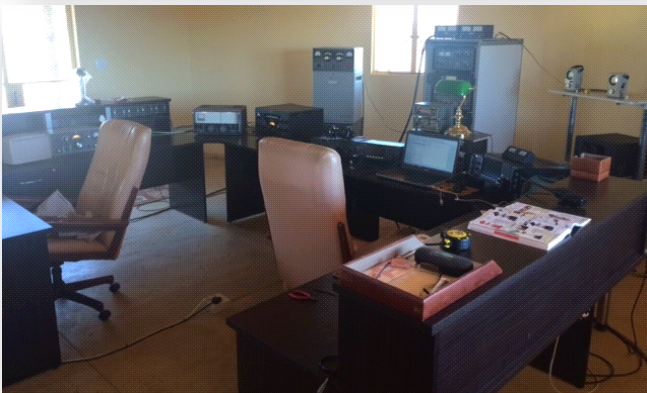
area of South Africa upon returning home to Africa in 1999. He was previously keen on EME and conducted first Africa/USA 144Mhz EME in May 1975 with WA6LET.

Bill is a Collins and Drake collector.

~ John VA7XB



		ZS6CCY 		ITU ZONE - 57 CQ ZONE - 38 75m 4 Square Vert. 20m 6 el monoband			
Vaalwater Rep. of South Africa							
To Radio	DATE			UTC	MHz	RST	2-WAY
	D	M	Y				
PE2MC	5	4	08	1806	14	59	SSB
	11	8	08	1804	14	59	SSB
73, Bill QSL Manager K3IRV							



September 2018

More Contest Contender

John Brodie VA7XB

The Fall Contest Season



John VA7XB has taken on the job of Contest Manager and is proposing an active schedule for the next year now that SARC has two contest grade radios available for club use at the OTC.

For that purpose John would like to know who would like to be notified about upcoming contests. If you have an interest in contesting, please contact John at va7xb@rac.ca with your preferred mode(s) and he will put you on the contact list. The objective for this fiscal year will be for SARC to compete in at least one contest a month so that members may acquire comfort with operating our new radios, accurately recording exchange information and using logging software.

If your main interest is in emergency communication, these contests provide invaluable experience in operating under sometimes chaotic conditions including multi-station pileups, QRM (man-made interference), QRN (natural interference), lids (bad operators), over-the-pole flutter, static crashes and fading.

If there is sufficient interest, we may even try some of the more exotic digital modes.

We cannot do them all, of course, but listed here are a few of the available contests for the months of September and October.

These and other contests are described at: <http://www.contestcalendar.com//index.html>

Upcoming Contests:

1-2 Sept	All Asian DX Contest (SSB)
8-9 Sept	WAE DX Contest (SSB)
15-16 Sept	All Africa International DX Contest (CW)
15-16 Sept	New Jersey, New Hampshire, Iowa QSO Parties (all modes)
29-30 Sept	CQ WW DX (RTTY)
29-30 Sept	Texas QSO Party (all modes)
6-7 Oct	California QSO Party (all modes)
13-14 Oct	Arizona, South Dakota, Nevada, Pennsylvania QSO Parties (all modes)
20-21 Oct	New York QSO Party (all modes)
21-22 Oct	Illinois QSO Party (all modes)
27-28 Oct	CQ WW DX (SSB)



Social Reminders

The Surrey weekly social gathering is on Saturday at the Kalmar Restaurant at 80th and King George Boulevard between 8 and 10:00 am. You don't have to be a SARC member to participate. Bring your significant other, bring your family, see old friends and have fun.



Antenna Adventures

Robert Fishwick VA7FMR

No Silk Purse in West Van

A couple of weeks ago I started the installation of the long wire antenna. After about an hour, I had to go into the house because I was so hot I thought I might have a mild dose of heat stroke. That was it for Thursday. Friday was just as hot and I managed to get the first pulley onto the trunk of a large Cedar tree at about twenty feet. I had already set up the wire and 9-1 UnUn the day before and had installed it at about a 40 foot height under the eaves of the roof. I got up early on Saturday morning in order to get out whilst it was still cool. I completed the installation with no further breaks in the cool of the early morning. The long wire is 142 feet long and is oriented as a horizontal L sloper. From the eaves of the roof the short horizontal leg of the L travels about 60 feet to the Cedar tree at a downward angle to about 20 feet in a WNW direction. The remainder of the wire now slopes down to a ten foot height in a SSE direction. The antenna is very, very good from 80 Meters past 6 meters. I was able to make contacts as soon as I turned on the radio. If I was to add another 2 or 3 feet of wire I could be OK on 160 meters as well. As it is, my SWR on 1.8 MHz is a little less than 3:1, getting much better the closer I got to the top of the 160 meter band. I would not like to use my 7300 at that SWR for any length of time, I think that I am very happy with what have. From 80 to 6 meters with no SWR higher than 1.75:1. I am looking forward to the coming contests of the next three weeks or so.

In my work trying to find an antenna that will work well at my Nieces house in west Van, I have made several discoveries. They fly in the face of all that I have heard and read about regarding the subject. The pundits tell us that more wire improves the signal received and more signal radiates from the longer wire. That is, in my opinion, if the LOCATION of that wire is in a perfect LOCATION. Being in the hollow of two ridges the LOCATION could not be worse. I almost doubled the amount of wire only to find that my signals were worse than the shorter wire. I also installed my 20 meter HamStick center fed dipole that John TI kindly referred me to. I was amazed to find that I saw 70% more workable signals than the long wire. I can also turn the dipole to different compass bearings and as a result I was able to work more stations. My conclusion to this scenario is, with a longer wire you can improve a perfectly located antenna location but with an imperfect antenna location, you can not improve things with a longer wire since you can not make a silk purse out of a pigs ear.

By the way, with my antenna analyzer I tested all of the Bands on the long wire, 160 meters had the worst SWR at about 3 to 1, tunable to a very decent level with my external tuner. All of the rest were 1.75 and below.

~ Robert VA7FMR



SARC member Kjeld VE7GP got quite a surprise during the summer when he found this wasp nest at the top of his tower. Kjeld reports that: 'We also have another one, it hangs over our fish pond, so I can't spray that one, it may kill the fish instead if any of the spray, ends up in the water. They are properly not to happy when I turn the antenna, but when that happens, I'm not outside.'

September 2018

Radio-Active Revisited

Susan Eshelman VE7IIE

Profiles of SARC Members

This month's Radio-Active goes back to 2012 when Susan Eshelman was our columnist. She submitted the following about Brett Garrett, then a relatively new SARC member. In his memory we re-publish it this month.

Today we'd like to introduce a new club member... but not a new ham. Brett Garrett VE7GM joined SARC in the Fall of 2011, having recently returned to the hobby. Brett first got his ham license around 1967, and enjoyed doing a little youthful operating before life got in the way. Having now refreshed his VE7GM - Basic with Honours, Morse and Advanced - SARC is pleased to have this long-time ham join the club.

Brett first became intrigued with ham radio as a sixth grader. His interest in electronics began when his father bought him a radio kit. A school administrator discovered his intense interest in electronics, and suggested to his mother that perhaps he should consider getting a ham license. Brett soon began attending ham classes run by the Vancouver Club in a member's basement, and succeeded in getting his license.

'Back in the day' when VE7GM got licensed, Morse code was a requirement for a Basic license, and operators had to show proficiency at 10 w.p.m. After assembling some equipment, Brett began operating HF on 80 and 40 meters using code.

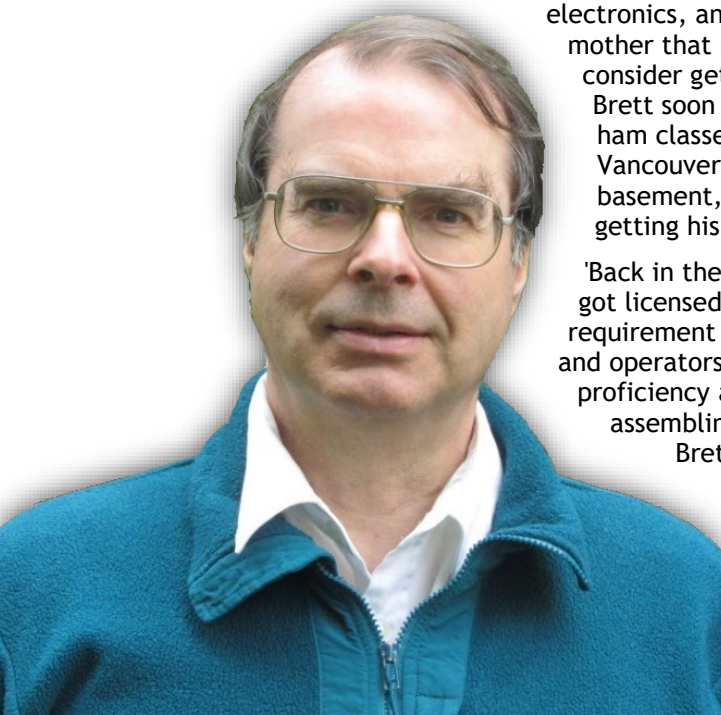
Today, VE7GM looks forward to refreshing his CW skills, advancing from a current 15 to his target of a solid 30 w.p.m.

Towards that end, Brett has been actively involved in the SARC

Contesting/Operating Skills training program being led by Fred Orsetti VE7IO and Jim Smith VE7FO. Describing the experience as 'just terrific', Brett reports that he's learning a great deal, and having lots of fun. For the recent BC QSO Party, he operated from his home station, which he'd just gotten operational the day before. Admitting that he's not much of a 'rag chewer', Brett finds the contest environment to be an enjoyable and satisfying operating environment.

Living in the Crescent Beach area, with somewhat limited antenna space, Brett is currently operating an IC-7000 on a 20 meter dipole that's about 4.5 meters high. He plans to add a vertical... as soon as he scratches out the right configuration of radials for the space. Meanwhile, currently active as a member of both SARC and SEPARS, local hams will have an opportunity to meet VE7GM on the weekly SARC/SEPAR nets. In fact, it was Brett's interest on the emergency communications side of Amateur Radio that recently sparked his renewed interest in the hobby. Having taken early retirement from his career as a Power Systems engineer for BC Hydro, Brett became more concerned with community level emergency preparedness after the recent Japan quake and tsunami. He then ran into Kelvin Hall VA7KPH at a local swap meet, he decided to get back into the hobby, and get involved. You'll now find him attending most SARC/SEPAR

Brett Garrett
VE7GM
Silent Key



meetings and workshops, and soon to be assisting with some of the SEPAR demos and training sessions organized by Marcy Lui VE7JT.

Overall, Brett says he's very happy to have gotten active in the local Amateur Radio community, and is grateful that hams who have so much capability and knowledge are so generous in sharing their time and experience. Having seasoned operators willing to sit down and really help you makes all the difference. For VE7GM, the club experience and the high caliber people who are there to help, has been a recipe for enthusiasm and inspiration that pushes him to go further and try harder.

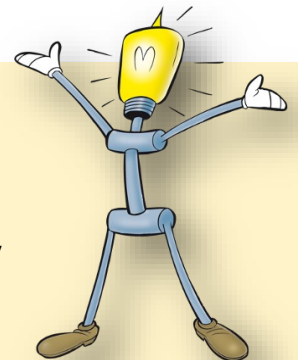


Top right: Brett contesting; Above: Brett demonstrates how sound waves travel at a 2013 SEPAR Children's workshop; and Right: Jinty offers a 'high-five' after successfully completing contesting coaching provided by Brett.



Membership Fees Are Now Past Due

Please note that our new fiscal year is here and your annual membership is due if you have not yet renewed. Payment may be made at any monthly meeting, at the Saturday coffee meeting, by mail or via PayPal. Details on payment options are available at our website at: <http://ve7sar.net/join.html>



September 2018

Remembering Brett Garrett VE7GM - SK

One of the 20%

They often say that 20% of a given membership do 80% of the work... Brett was one of the 20%, no, more like 5%. An active member of both the Surrey Amateur Radio Club (SARC) and Surrey Emergency Program Amateur Radio (SEPAR), Brett freely shared his knowledge and led Surrey Amateurs to two very successful Field Days.

Brett first got his ham license around 1967, and enjoyed doing a little youthful operating before life got in the way. In 2012, John Brodie shared a memory of an early encounter with Brett:

"I was licensed in 1960 when I was in 10th grade at Prince of Wales High School. After graduating in 1962 I put ham radio aside as I began my Engineering education. My ham radio gear in those days consisted of mostly post WW2 vintage odds and ends of the "low budget" variety,

scrounged, donated by ham friends or purchased with paper route earnings.

Before retirement, my father worked at C Gardner Johnson, ships agents in Vancouver for the Swedish Johnson Line and Japanese Mitsui OSK. One of his colleagues was a man which we children only knew as "Mr. Garrett". Since I knew that there would be no ham radio in my life for a few years, I disposed of all my gear. The receiver, a military version RCA ACR-3 behemoth weighing about 100 lb, went to an aspiring ham in the neighbourhood named Bill Coltart who, through research on the RAC registry, I find is VE7BMM. The remainder went to my father's colleague, "Mr. Garrett" whose son, I was told, was interested in ham radio.

At the time I never met the son, and wondered if he had gone on to get licensed and involved in the hobby. Now I know. He is our Brett Garrett VE7GM, a relatively new member of SARC and now a Director, who, like me, came back to the hobby after several decades away and was featured in last month's "Radio-Active". Garrett is an enthusiastic participant in club activities, including the CW subgroup of the "Operator Skills Training" and contesting program started last Fall. The photo shows Brett returning the "junk", including a Harvey Wells TBS-50 transmitter to its former owner."

Living in the Crescent Beach area until recently, with somewhat limited antenna space, Brett operated an IC-7000 on a 20 meter dipole at about 4.5 meters high. After his mother passed a couple of years ago, Brett decided to move to some property he had on Green Lake with the intention of building his dream station. As a result we saw less of him, although he was occasionally available in town for coffee and the annual SARC Christmas Party.

There is a brief video on our YouTube channel at: <https://tinyurl.com/ve7gm>

We will miss Brett.



Brett - Where to start?

My own involvement with SARC started when I was recruited by John, VE7TI, as a Field Day operator.

There are many enjoyable ways of conducting FD which range from everyone sitting around the BBQ, telling stories and making a few contacts to the hard core contest style where everybody goes all out to WIN.

I was told that it would be a hard core, win for Canada, situation. Being a hard core contester myself I took the bait.

Well, it turned out that the operators, while enthusiastic, didn't have the HF contest experience necessary to achieve the goal. Nonetheless, it was obvious that the potential was there so, once FD was over, I joined the Club and made a FD training proposal to the Exec with the goal of winning for Canada, which was accepted.

This training started in October (I think) and ran until next year's FD. It consisted of many formal training sessions including class room style and participation in the major contests, during which the ops received coaching on the operating techniques for maximizing the number of contacts per hour.

This would be a very significant investment of time for the trainees. Brett realized that many people might be worried about this so he started a "Get Your Feet Wet" program to provide a low commitment introduction to contesting so that they could see whether or not they liked it.

Here's how it worked.

A potential trainee would sign up for an hour or two of operating time during a major contest.

The trainee would operate the contest while being mentored by one of the experienced members, with no requirement that he sticks to it for his entire shift.

If, after 15 minutes or whatever, the trainee says, "This is not for me" and ends his session then it will be obvious that attending the formal training would not be a good use of his time.

Conversely, if he really enjoyed the experience then he was more disposed to make the time commitment required by the formal training.

Brett managed the whole thing.

Altogether, a stroke of genius on his part.

Some trainees enjoyed the Get Your Feet Wet program so much that they repeated it three times!

Brett was also very involved in the formal training and was a great help to me.

Did the training achieve the #1 Canada goal? No, but we did move up to #2. After a 2nd year of training we made it to #1.

Brett was both persuasive and persistent. Over the course of several years on the FD Committee he kept pointing out that some QRP FD operations did VERY well using only 5 watts of power, making better scores than us with 100W. (QRP is ham lingo for operating at 5W or less.) The way that the FD scoring is set up, a CW contact using more than 100 watts is worth 1 point, one using 5 to 100 watts is worth 2 points and one made using less than 5W is worth a big 5 points. Sounds like a no-brainer. You want to maximize the points? Go QRP. Just one problem. People find it hard to hear you so you get fewer contacts per hour.

Finally, the FD Committee started paying attention to his point of view and consulted propagation predictions to see what we might be able to do with just 5W. Hoo boy!! With some adjustment to the antenna lineup we could do very well indeed.

Did we? We sure did.

Shattered the Canadian record for all categories.

Out of 2719 FD stations in the US and Canada in 2015, some with more than 10 transmitters and most running 100W, we ranked #91 with our 3 transmitters and 5W.

Altogether a VERY significant achievement which any club would be proud of.

Wouldn't have happened without Brett.

We were very fortunate to have had Brett as a member.

Brett's gone

Damn

~ Jim Smith
VE7FO



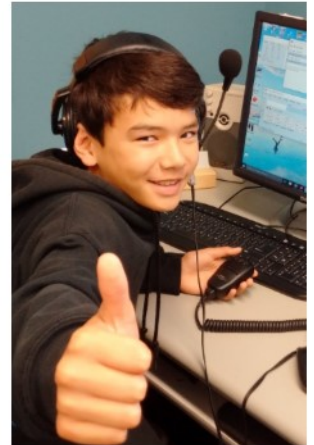
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- Practice an exciting hobby





More Surrey News

An Invitation To Assist

We have received an invitation to have our members assist at an event. Read on...

My name is Geoff Hill; I am the volunteer coordinator for the 2018 Pacific Forest Rally, the 5th round of the 2018 Canadian National Rally Championship, which is being held on September 28-30, 2018. I would like to tell you more about this event, in the hopes that you or members of your club would be interested in volunteering as Radio Operators.

Pacific Forest Rally is a sanctioned performance driving competition taking place on temporarily closed forestry roads surrounding Merritt, BC. The event needs amateur radio operators such as yourselves, who are crucial to the safety and success of the weekend. This is also an amazing opportunity to put your amateur radio skills & equipment in action, and see real cars, on real roads, driving real fast!

What you would be doing:

As radio operators, you would be stationed at the start and finish line of each closed road, or at blocker positions along the route itself, monitoring and controlling access at intersecting roads or high-risk areas. The primary roles of the radio operator are to help the event organizers track the progress of rally cars on the roads, to keep any civilians from entering the road during competition, and to pass along relevant information in the event of a crash or safety incident.

There will be a training and Q&A session for operators just before the event.

What we provide:

To reduce costs to our volunteers as much as possible, we try to provide free shared accommodation at the Best Western, Ramada, or Quality Inn hotels in Merritt. We also provide bag lunches during the event, and free admittance to the awards banquet and post event celebrations. When the budget allows, we do our best to provide shirts, toques, or other free swag to volunteers to show our appreciation.

What you need to bring:

Because this event takes place in late autumn conditions on dirt/gravel/muddy/snowy forest service roads, we advise proper winter or all-weather tires in good condition, a reliable vehicle with reasonable ground clearance, and reliable radio equipment that can run for multiple hours at a time on the power provided by your vehicle. It is good practice to also bring food, fluids, and anything else you might need for an extended stay outside. The event does run after dark, so headlamps and flashlights will come in handy. Finally, warm winter clothing and wilderness common sense are also important to bring along!

Where to sign up:

The Volunteer registration page for the event can be found here:

<https://www.rallywest.com/signup/volunteer/PacificForestRally>

For more information:

[Introduction to Rally Volunteering](#) (description of the radio operator role in particular can be found on page 6 of this document)

[Pacific Forest Rally Website](#)

[Canadian Association of Rallysport \(CARS\) website](#)

Canadian Association of Rallysport [Youtube channel with lots of videos showing rally cars in action](#)

I humbly request your assistance to inform members of your amateur radio club of this opportunity. If you have any questions, don't hesitate to get in touch with me directly. Thank you for your time, I look forward to seeing you out on the stages!

Geoff Hill
geoff@rallybc.com

Volunteer Coordinator, Pacific Forest Rally 2018
Director at Large, RPM
Secretary, WCRA

September 2018

Surrey Emergency Program Amateur Radio



The SEPAR Report

Roger Andrews VA7VH - SEPAR Coordinator

Reflecting On The Summer Forest Fires

In the Greater Vancouver area, we have not had to endure any evacuations due to the fires that are plaguing much of our province and even into the USA. The smoke in our area gives us some impression of how bad the forest fires must be. The Province of BC declared a state of emergency August 16th 2018 and there were about 560 fires burning in our province alone. For a short stretch, the news reported, that we had the worse air quality in the world.

There has not, to my knowledge, been a need to activate any Emergency Communications Teams due to the fires. That doesn't mean that there isn't the real possibility that there could be activations for forest fires.

The Colorado forest fires in July 2012 saw ARES teams in Colorado County called out to communicate at a number of fires. In Arizona this year, the ARES group in Coconino County was called to action because of poor cellular communications to the front line of the forest fires. In 2016, in Tennessee, ARES bridged the communications gap for the Red Cross during the wildfires there. In California in 2015, during the wildfires there, ARES volunteers in Amador, Yolo and Sacramento Counties were activated to assist the Red Cross. In 2016, New Mexico

Volunteers were also activated during wildfires in that state.

It's pretty unlikely that we'll be called to action for a wildfire in the Greater Vancouver area. It is a real possibility for other areas of the province however. When a disaster happens close to home, it makes people think about disasters, so it's a good time to think about your preparedness status.

If you are reading this and don't know how to prepare (hopefully you aren't a SEPAR member because all our members should be ready), there are lots of places online that can give you ideas of what you need to do. Preparedness is a little different for everyone, depending on your personal needs. A good place to start is:

<https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/preparedbc>

Get Prepared!

SEPAR Annual Competition

As of last April, we started a competition that active SEPAR members can participate in. The most active member will win an MD390 DMR Radio package. You can checkout pictures of the radio and see the rules on <http://va7.ca/radio> (an interim website).

If you are not now a member, we'd love to have you on-board. Contact me at the link above.

Weekly Nets

Every Tuesday evening at 1930 hrs (7:30pm PDT) we start a ½ hour NET on a local repeater provided by the Surrey Amateur Radio Club (SARC) on 147.360 MHz +600kHz and a tone of 110.9. There September be a simplex test or a test NTS message transmitted during the NET at the Net controllers discretion. This is an excellent opportunity to practice sending and receiving this form of messaging. Besides, it adds a little spice to the regular check-ins on the net. Please join us. NTS Radiograms can be found on the SEPAR website here, or, if you would like a fillable PDF that you can enter on your computer, you can get it from here.

Thursday nights at 19:30 hours, This Net has changed! We are no longer doing a regular 2 meter simplex Net on this night. Any plans for Thursday night will be announced on the Tuesday before. This night will now be used for optional tests. For example NTS Digital exchanges, 6 meter, 2 meter 60 cm and 220 Nets. If someone wants to do a particular net on a Thursday, then please announce it on the Tuesday before.

~ Roger VA7VH
SEPAR Coordinator

Name	Frequency	Offset	CTCSS
VE7RSC	(Primary Repeater) 147.360	+0.600	110.9
VE7RSC	(Secondary Repeater) 443.775	+5.0	110.9
VE7RPT	(Primary Regional Repeater) 146.940	-0.600	Optional 136.5 Rcv
Simplex 1	(VHF) 146.550		
Simplex 2	(VHF) 147.420		
Simplex 3	(UHF) 446.550		
Simplex 4	(UHF) 447.425		

Other frequencies in the Greater Vancouver area:

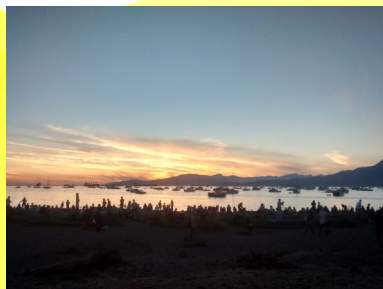
Primary:	Coquitlam/Abbotsford	146.430
Primary:	Inter-Municipal Group 3	146.445
Primary:	Vancouver; Mission; Sec. Coquitlam	146.460
Primary:	Kent-Mission; Sec. Richmond	146.475
Primary:	Inter-Municipal Group 2	146.490
Primary:	New West; Sec. Richmond	146.505
National	Calling / FM Simplex Group I	146.520
Primary:	North Shore; Port Coquitlam	146.535
Primary:	Bowen Island; Surrey	146.550
	Intermunicipal Group 1 Coordination	146.565
Primary:	Lions Bay/Vancouver/Delta/Langley	146.580
Primary:	Port Moody; Sec. Burnaby	146.595
Secondary:	Vancouver/Surrey	147.420
Secondary:	Vancouver (UBC) / Maple Ridge	147.450
Primary:	White Rock/Chilliwack; Sec. No. Shore	147.480
Secondary:	Burnaby/Pitt Meadows	147.510
Primary:	Delta; Sec. Abbotsford	147.540
Primary:	Hope; Sec. Delta; ALSO EMBC	147.570



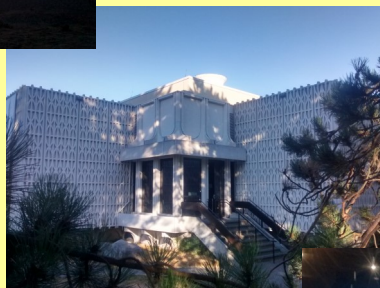
Surrey Emergency Program Amateur Radio

September 2018

The Celebration of Lights



Michael VE7GMP and Stan VA7NF spent some time with VECTOR, observing Amateur Radio communications assisting the Celebration of Lights. Michael sent along some photos.



The first image is taken from the inside of the Vancouver Museum, where the temporary communications center was set up. The second provides a slightly fuzzy view of the mag-mount repeater antennas on the flashing at the edge of the upper roof.



A Windows 10 Tip For Hams

Keep those specific drivers from updating

Does this sound familiar? You install a new piece of hardware and finally get it working. Then Windows updates and it no longer works! Likely what has happened is that the device driver also updated and is no longer compatible. The solution for older Prolific PL-2303 HXA/X chips used in serial to USB converters is to use a driver release older than vn3.4. Each time you turn your computer off, the latest driver is reloaded due to windows auto-update (or if you unplug and re-plug the device into a USB port).

To avoid that, a recent work-around exists and has been published by Microsoft. It's a tool named 'wushowhide.diagcab' (Show and Hide Update). It allow you to inhibit auto-update for a particular program or driver (Prolific in this case).

For more information and where to download this tool, take a look at this article: [KB3073930](#) How to temporarily prevent a driver update from reinstalling in Windows 10.

I have tested it and it works fine. The only problem with it is that it reloads the latest driver when you plug the device into a never before used USB port. So, if you change the place of connection, you should manually set the driver to vn3.3, but you have to do that only the first time you use this port. Next time, the driver remains at vn3.3 and never upgrades to vn3.6.

More information: <https://support.microsoft.com/en-ca/help/3073930/how-to-temporarily-prevent-a-driver-update-from-reinstalling-in-window>

Download: <http://download.microsoft.com/download/F/2/2/F22D5FDB-59CD-4275-8C95-1BE17BF70B21/wushowhide.diagcab>



Wire Snippets

From Brett VE7GM (SK)'s family:

Thank you so much to you and all the others. What a lovely thing to do. I know how much Brett enjoyed his involvement in the ham radio community and his time with you all.

He was very sad when he left Surrey that he wouldn't be able to continue going to the meetings, events, and coffee get-togethers. I know he would be so touched by this lovely gesture, as are we. Please thank everyone for us.

Chris

WWV and the Atomic Clock shutting down?
<https://www.eham.net/articles/41829>

Amelia Earhart may have last been heard by a Ham?
<https://metro.co.uk/2018/07/24/vanished-airwoman-amelia-earharts-haunting-final-distress-calls-revealed-7754970/>

Real time band conditions website

The purpose of this experimental web site is to provide 24 7 365 actual (REALTIME) band condition information to CW QRPP, QRPe and CW/SSB for Contesters interested in increasing their scores.

It can also be of benefit to other Radio Amateurs to determine band conditions for Nets and casual QSO s.

This information is NOT based on any software predictions or any kind of satellite based readings. It is based on a new Ionospheric sounding method called HF Ionospheric Interferometry which operates very similarly to the PolSAR system used by NASA.

<http://www.bandconditions.com>

Also, check out the VOACAP predication Web page at: <http://www.voacap.com/hf/> Also on Twitter:
<https://twitter.com/GiellaW4hm>

September 2018



KB6NU's Column

Dan Romanchik, KB6NU

Get your free copy of A Field Guide to Simple HF Dipoles

A link to A Field Guide to Simple HF Dipoles was posted to reddit recently, and I liked this document so much that I thought I would share it with you. It was originally written for the military, but is now available for free from the Defense Technical Information Center.

The preface to this document reads:

“Under project Agile, Stanford Research Institute has supplied several teams to assist operating personnel in improving the performance of field radio networks. In this work, it has been observed that U.S. military and civilian antenna manuals often contain misleading information regarding the operation of field antennas and tend to be overly complex. Consequently, this guide has been prepared to assist in training

personnel concerned with the construction of simple HF antennas in the field.”

I must say that A Field Guide to Simple HF Dipoles does this very well. It not only explains how dipole antennas work, it also does a very good job of describing the basics of radio waves and propagation. And it does this without getting overly technical.

For example, on the left is Figure 10. It's used to describe current flow in a dipole antenna.

The Field Guide reads:

“Electric current in a conductor consists of the flow of small particles called electrons. Figure 10(a) represents a dipole with electrons in it. When the transmitter is turned off, the electrons distribute themselves evenly throughout the dipole, as shown. All electrons repel each other and try to get as far from each other as possible; that is how they achieve the uniform distribution shown in Figure 10(a). When the transmitter is turned on, the electrons flow back and forth from end to end as shown in Figures 10(b) and 10(c). First the electrons flow to the left and crowded at one end as shown in Figure 10(b). Second, since the electrons repel each other, the push off to the right and get crowded together at the other end, as in Figure 10(c).”

It then uses this description to talk about voltage and current distribution along a dipole antenna:

“The difference between voltage (volts) and current (amperes) in a dipole is also illustrated by Figs. 10(b) and 10(c). You can see that the maximum flow of current is going to be in the middle of the dipole. An observer at the center of the dipole would see the electrons rush past, first one way and then the other. The center is the maximum current point. Very little current flows near the end of the dipole; in fact, at the extreme ends there is no current at all for there is no place for it to go. However, at the ends of the dipole, there is a great

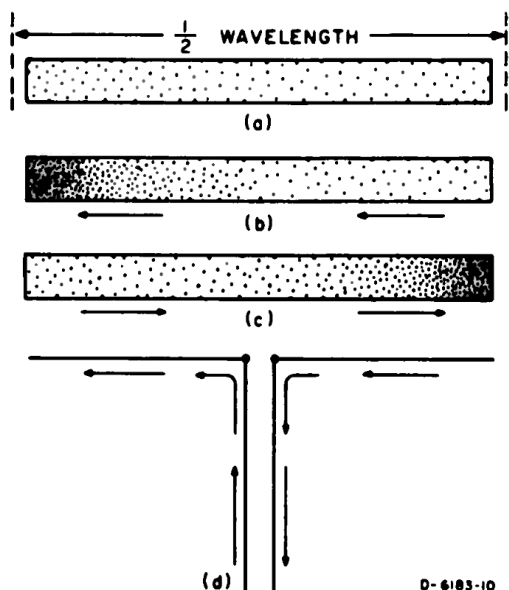


FIG. 10 CURRENT FLOW IN DIPOLE ANTENNA

change of voltage; when the electrons are densely packed, this represents a negative voltages, and when there is a scarcity of electrons, it represents a positive voltage. Thus you can see that the voltage at each end swings alternately positive and and negative. An end of the dipole is a maximum voltage point.”

A Field Guide to Simple HF Dipoles is packed with all kinds of goodies like this. Download it at:

<http://www.dtic.mil/dtic/tr/fulltext/u2/684938.pdf>

~ Dan KB6NU

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When he's not trying to figure out which way current flows, Dan blogs about amateur radio at KB6NU.com, teaches ham radio classes, and operates CW on the HF bands. Look for him on 30m, 40m, and 80m. You can email him at cwgeek@kb6nu.com.



2018 Spring Basic class graduate Trevor McDonald VA7TCM is congratulated by John VE7TI, one of the Instructor/Examiners. Trevor's father VE7CZR, is a silent key, and he has been memorialized by way of a tattoo on Trevor's arm.

Trevor has become active quickly and participated in Field Day and several contests since obtaining his license.

Trevor is currently active with Digital Mobile Radio (DMR), one of the promising new technologies, and will be an asset to members wishing to know more about it.

Despite the usual summer doldrums on the weekly net and Saturday coffee, we have had some good attendance. Here is a recent Saturday morning crows at The Kalmar restaurant.



September 2018



Tidbits from the Amateur Radio World

QRM: Petition To The House Of Commons

Intentional or man-made interference (QRM) to Amateur Radio has become a significant issue in Quebec and elsewhere. Unlike the United States, where the FCC investigates, tracks and enforces the regulations, sometimes with hefty fines as a result [see story next page], here in Canada enforcement has dwindled. VE7SYU has started a digital petition, known as an e-Petition, calling for more stringent enforcement of the Canadian Radio Regulations.

Provided there are sufficient signatures, this is a legitimate and official tool on which Parliament has to act. Canadian hams, please sign and share via the link at the end of this article.

PETITION TO THE HOUSE OF COMMONS IN PARLIAMENT ASSEMBLED

Whereas:

- The Minister of Innovation, Science and Economic Development Canada is responsible for enforcing the regulations on the use of radio frequencies;
- An individual with malicious intentions is threatening the security of emergency radio communications in Quebec;
- Canada has more than 50,000 radio communications

stations run by amateur radio operators with licences issued by the Canadian government;

- Quebec has hundreds of active amateur radio stations, and many of these stations are prepared to help authorities when natural disasters or major incidents occur that break down traditional lines of communication;
- For two years a Nicolet resident, near Trois-Rivières, illegally set up a transmitting radio station and is generating interference on purpose;
- Amateur radio operators in Quebec have identified the illegal radio station and brought it to the attention of Innovation, Science and Economic Development Canada and its inspectors seized the individual's radio equipment; and
- The individual acquired new equipment right away and returned to jamming the airwaves. The man is known to police in Nicolet and Trois-Rivières. He has regular encounters with the law. We are calling on the government to provide more support to the Department of Innovation, Science and Economic Development Canada so that it can intervene more decisively in this matter.

We, the undersigned amateur radio operators of Canada, call upon the Government of Canada to take action to ensure the security of high frequency (HF) radio communications.

<https://petitions.ourcommons.ca/en/Petition/Sign/e-1631>

~ 73, VE2SYU





FCC Proposes \$18,000 Fine in Amateur Radio Interference Case

08/02/2018

The FCC has issued a Notice of Apparent Liability (NAL) proposing to fine Jerry W. Materne, KC5CSG, of Lake Charles, Louisiana, \$18,000 “for apparently causing intentional interference and for apparently failing to provide station identification on amateur radio frequencies.”

“Mr. Materne was previously warned regarding this behavior in writing by the Enforcement Bureau and, given his history as a repeat offender, these apparent violations warrant a significant penalty,” the FCC said in the NAL, released on July 25.

In 2017, the FCC received numerous complaints alleging that Materne was causing interference to the W5BII repeater, preventing other amateur licensees from using it. In March 2017, the repeater trustee banned Materne from using the repeater.

Responding to some of the complaints, the Enforcement Bureau issued a Letter of Inquiry (LOI), advising Materne of the allegations and directing him to address them. Materne denied causing interference but admitted to operating simplex on the repeater’s output frequency. In June 2017, the FCC received an additional complaint alleging that Materne had repeatedly interfered with an attempted emergency net that was called up as Tropical Storm Cindy was about to make landfall. The complaint maintained that Materne “repeatedly transmitted on the repeater’s input frequency, hindering the local emergency net’s ability to coordinate weather warnings and alerts on behalf of the National Weather Service,” the FCC said in the NAL.

Local amateurs were able to track the interfering signal to Materne’s residence and confirmed their findings to the FCC, prompting a Warning Letter advising Materne of the complaint and pointing out that his behavior “as described in the complaint would be a violation of Section 97.101(d) of the Commission’s rules.” Materne responded to the Warning Letter to argue that it was legal to transmit on the repeater’s output frequency, further stating that “he was tired of this trash harassing me,” the FCC said.

In the wake of further complaints, FCC agents visited Lake Charles, tracked transmissions on 146.130 MHz to Materne’s residence, and monitored them for up to 7 hours. The agent reported hearing Materne “playing music on 146.130 MHz and warning other amateur operators that the local Amateur Radio club would not be able to conduct their net later that day.”

That evening, the agent watched as Materne drove to a location near the W5BII repeater, where, the agent said, Materne “began transmitting an amateur digital radio signal from a hand-held radio in his vehicle,” disrupting the net and failing to identify. Subsequently, the agent, accompanied by a deputy from the Calcasieu Parish Sheriff’s Office, approached Materne’s vehicle and confirmed that he possessed a radio capable of operating on 146.130 MHz. “Audio recordings captured by the agent demonstrate that the intentional interference ceased as the agent and the Sheriff’s deputy approached Mr. Materne’s vehicle,” the FCC said in the NAL.

The FCC said that based on the evidence before it, Materne “apparently willfully violated Section 333 of the Act and Section 97.101(d) of the Commission’s rules by intentionally interfering with other licensed amateur communications,” and that he “apparently willfully violated Section 97.119(a) of the Commission’s rules by failing to transmit his assigned call sign.”

“We find that Mr. Materne’s apparent repeated, intentional, and egregious apparent violations of Section 333 of the Act and Section 97.101(d) of the Commission’s rules warrant an upward adjustment of \$10,000 to the proposed forfeiture,” the FCC said. “In applying the applicable statutory factors, we also consider whether there is any basis for a downward adjustment of the proposed forfeiture. Here, we find none.”

~ FCC

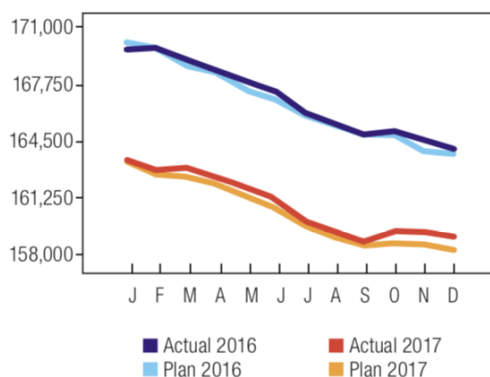
September 2018



ARRL The national association for
AMATEUR RADIO®

Membership Woes

Membership Forecast vs. Actual



In the United States, the ARRL's membership problems are getting worse. In a section that's misleadingly titled, "2017 Membership Surpasses Goals," the report admits that membership fell by 5,000 in 2017. Not only that, it says, "membership is forecast to continue to decline in 2018 (2.0% loss is forecast)." Nor does this report expect an increase anytime soon. It goes on to say, "The decline should be to flatten out in 2019/2020."

The ARRL expects membership to decline in 2018 and for the decline to "flatten out" in 2019/2020.

Aside from noting that a few test mailings were made to new hams and that "multiple tests for new ham mailings are scheduled for 2018," there's no mention

of any kind of new member initiatives. Honestly, I'm floored by the lack of urgency here. If we're not there already, we'll quickly reach a point where fewer than one in five licensed radio amateurs will be ARRL members.

If you don't think that the membership decline will have repercussions, thing again. Fewer members means a loss of credibility with the FCC and with politicians. It also means fewer dollars for programs that could really benefit amateur radio. I would even go so far as to say that membership should be the #1 priority of the League at this point.

We really need to get creative about this. And the time is NOW, not in a year or two.

~ Dan KB6NU

[Click for Dan's Blog](#)

An IC-7300 Specialty Site

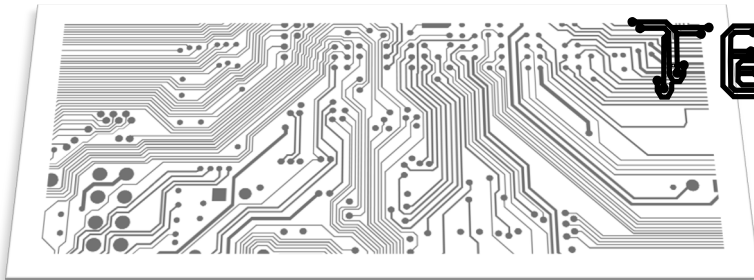


There are now a number of SARC members who have invested in the Icom IC-7300. A new website specializing in this transceiver came to my attention during the summer. If you have a 7300, or are considering getting one, this site and its links are a must...

<http://g3nrw.net/IC-7300/>

The win4icom software referred to is particularly good.

~ John VE7TI



M0PZT

A Simple 1:1 Choke Balun

As you're probably aware, it's good practice to have a Balun where BAL(anced) meets UN(balanced) feeder and the following is my latest accessory for when I'm operating "[Portable](#)". This is a very simple 1:1 Choke Balun made from a PL259, some RG58, an [FT240-31](#) ferrite toroid plus one of my Ham Goodies [Dipole Centres](#).

The PL259 plugs into a radio or ATU and the balanced feeder attaches to the M4 bolts on the yellow centre. This also saves using a boxed version which introduces another PL259/SO239 combo - the RG58 coax is kept deliberately short as this is, essentially, *balanced line to the Shack*. 8 turns form a resistive choke from 3.5MHz on this 31-mix material. Using the slightly cheaper 43-mix material would raise this to around 5MHz.

Essentially, it's just like any standard coaxial choke that you usually get "inside a box", but this version makes connections a little easier, not to mention cheaper: Around £12 of parts if you omit the plastic fitting and go with a pair of standard power-supply terminals.

For more of my words and pictures on Baluns - see the dedicated web page at: <http://www.m0pzt.com/baluns/>



September 2018



25th Anniversary Pin

SARC's Pat Speer Makes largest Donation



*SARC Member
Pat Speer VE7PJS*

To commemorate our 25th Anniversary, Radio Amateurs of Canada launched the special RAC 25th Anniversary Challenge Coin program in May. Under the program, individuals who pledge donations to RAC of \$100 or more receive a special serialized coin commemorating RAC's 25th anniversary.

Through the RAC Challenge Coin program, we hope to raise sufficient funds to make RAC stronger and enable it to deliver more services and benefits to our members and to Amateur Radio in Canada and internationally during our next 25 years.

As part of a special promotion from May 21 to June 3, the individual who made the largest donation to RAC was eligible to receive the very first RAC Challenge

Coin #001. We are pleased to announce that Patrick Speer, VE7PJS, has claimed that honour with his donation of \$575. On behalf of Radio Amateurs of Canada, I would like to congratulate Patrick and thank him for his significant contribution.

I would also like to thank all of the donors who have contributed so far and also all of the future donors in the coming months.

For more information on the RAC 25th Anniversary Challenge Coin program and on how to order your coin please visit: <https://wp.rac.ca/25th-anniversary-coin/>

*Glenn MacDonell, VE3XRA
RAC President and Chair*



The Radio Amateurs of Canada (RAC) magazine 'The Canadian Amateur' (TCA) July-August is now available to members on-line. For membership information, please visit: wp.rac.ca



John Schouten VE7TI

Google Home and Alexa In The Shack

I've recently become enamored with personal assistants. No, not the kind that you have to pay regularly... the kind that connect to your home wifi system and make life easier.

There are three primary systems, depending on your operating system. Google Home and Amazon Alexa are probably the more common, while Mac users may prefer the currently less capable HomePod.

Google Home speakers, or the app enable users to play audio and speak voice commands to interact with services through Google's intelligent personal assistant called Google Assistant. A large number of services, both in-house and third-party, are integrated, allowing users to listen to music, control playback of videos or photos, or receive news updates entirely by voice. Google Home devices have integrated support for home automation, letting users control smart home appliances with their voice. Multiple Google Home devices can be placed in different rooms in a home for synchronized playback of music. An update in April 2017 brought multi-user support, allowing the device to distinguish between up to six people by voice. In May 2017, Google announced multiple updates to Google Home's functionality, including: free hands-free phone calling in the United States and Canada; proactive updates ahead of

scheduled events; visual responses on mobile devices or Chromecast-enabled televisions; Bluetooth audio streaming; and the ability to add reminders and calendar appointments. The wake-word is "Hey Google" or "OK Google".

Amazon Alexa is a virtual assistant developed by Amazon, first used in the Amazon Echo and the Amazon Echo Dot smart speakers. It is capable of voice interaction, music playback, making to-do lists, setting alarms, streaming podcasts, playing audiobooks, and providing weather, traffic, sports, and other real-time information, such as news. Alexa can also control several smart devices using itself as a home automation system. Users are able to extend the Alexa capabilities by installing "skills" (additional functionality developed by third-party vendors, in other settings more commonly called apps such as weather programs and audio features).

Most devices with Alexa allow users to activate the device using a wake-word (such as "Alexa"); other devices (such as the Amazon mobile app on iOS or Android) require the user to push a button to activate Alexa's listening mode. Currently, interaction and communication with Alexa are only available in English, German,



Above left Amazon's Alexa; right Google Home. Both come on sale for about C\$40. Below Apple's HomePod, you will have to break your piggy bank to buy this one!



September 2018

IFTTT: If this, then that is an app that allows you to program your own unique commands for applications.

<https://ifttt.com/>

French and Japanese. It's a burgeoning market, Amazon has more than 5,000 employees working on Alexa and related products.

Microsoft and Amazon have announced a joint project to integrate Alexa into the Windows 10 operating system alongside Windows own personal assistant Cortana.

How does this relate to actual usefulness? I couldn't decide which one to go with. Currently this is a very new market and both Google and Alexa are in stiff competition to be the leader. Its like the old 8-track vs cassette or Beta vs VHS standards. Fortunately, many accessories are both Google and Alexa compatible.

Aside from being able to turn on my smart TV by voice, listening to my music collection or a radio station on command throughout the house, and asking them for the weather report, the news or a joke, new skills for these devices arrive weekly, some more useful than others. Using a combination of Google Home and Alexa devices has given me a good insight into the capabilities (and weaknesses) of each. At this point, Google seems to be the more useful of the two where my interests are concerned. A few examples.

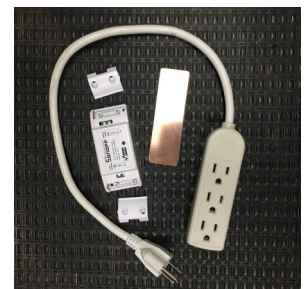
I have installed a half dozen 'smart' (meaning wi-fi enabled) lightbulbs and outlets. I have recycled all of my old mechanical timers. Often the power would go out and all of my timers required resetting. Now they pick-up where they left off and each goes on and off as required and on command through Google Home or Alexa—even from my smart phone or tablet when I am not at home. For an example, see <https://youtu.be/Wq-dC61EH7Q>

In my eagerness to further explore, I found the low-cost [Sonoff smart device](#). It is also Google and Alexa compatible and it is an experimenter's dream. I am currently setting up my garden sprinkler system with a 115VAC valve so that it will turn on at my voice command or though the software programmed timer. I already use it to turn on my workshop dust extractor... oh so many projects, so little time!

But back to Ham Radio... I wanted a low cost versatile way to turn station power on and off Using a Sonoff switch (I bought 6, making them about C\$6.50 each). Now I walk into my shack and say: "OK Google (or Alexa), turn on my station" and everything lights up. The same happens in reverse when I power down. Sonoff also has low cost temperature sensors, water sensors and motion detectors, all of which work with the smart home controls.

Building a smart power strip

Rather than purchase off-the-shelf devices, I am using the Sonoff modules frequently. Their firmware and support is excellent and they are easy to mount almost anywhere. I use a dollar-store 3 outlet power strip but you can use any 110-240 VAC device you like as long



The Sonoff single and dual smart devices are the most reasonably priced that I have found.

as you stay within the Sonoff's current rating. Also required is a piece of copper clad printed circuit board. Many hams have the skills but, if you're not comfortable working with 115 volt wiring then this project is better left for others.

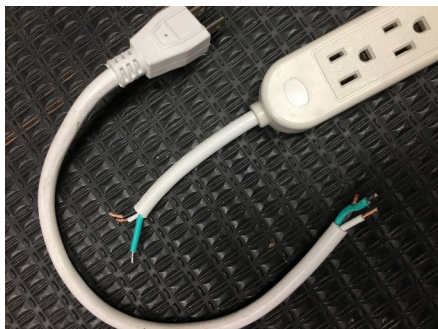
1. I start by cutting the PCB to size rounding the 4 edges, then matching the size to the Sonoff's base. Clean the PCB with some fine steel wool to remove any oxidation.



2. Using the Sonoff as a template, mark the mounting holes on the PCB. Drill a small hole at each mark.



3. Cut the power strip supply wires and strip the insulation.



4. Connect the wires to the Sonoff as per the instructions included with the module.



5. Solder the green input and output ground wires to the PCB through the holes drilled earlier.



6. Connect the black (hot) and white (neutral) wires to the Sonoff.



7. Re-attach the cover plates to the Sonoff.
8. I used some sticky dual sided tape to mount the Sonoff back-to-back with my power strip. Finish by programming the Sonoff to your wi-fi system.

September 2018

SARC CLUB EXECUTIVE 2017-2018

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[president @ ve7sar.net](mailto:president@ve7sar.net)

VICE PRESIDENT

John Brodie VA7XB
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John Schouten VE7TI

Going Into A New 'Hamming' Season

Every year, at the start of a new season we, your Directors, look for ways to involve you as members. You have no doubt heard the adage "20% of a membership do 80% of the work". With SARC, that is our experience. We recognize that there comes a point for every club where some of its members are not motivated and are not active in the club. There are many reasons members choose not to participate but as a club leadership we do not always know why.

Just as businesses try to motivate their employees to work harder and progress, clubs need to motivate their members in order to be able to maintain retention rates. In fact, motivation is no longer an option, it has become a necessity.

The idea is simple - attitude is contagious. It is a fact that we tend to feed off the sentiments and reactions of those around us. Within a club, if you foster an ambitious, positive and supporting atmosphere, the rest of the club members should begin feeling encouraged to participate and bring forth their ideas to make a difference, and in turn remain a committed member for a long time to come.

Happy members are also those motivated to do good for the club. In fact, we do not need an elaborate plan to achieve this. Sometimes just being asked means a lot. At our next meeting, I'd like to see every member anonymously write changes that they would like to see in SARC which would make you happy. By doing something like this, you show that you care about the reason **you** joined SARC and your

level of satisfaction. Your Directors will strive to implement some of those suggestions.

If you were asked about how involved and invested you are in SARC's success, what would your answer be? How good is your meeting attendance rate? Do you participate in club events? Is there potential to improve? What is it we need at meetings, specific topics... or?

It is said that a successful club is one where all members can adopt and share a 'we're in this together' attitude, which is something that requires passion. The good thing about this is that all of our members have this passion, otherwise they wouldn't be part of Amateur Radio. We want to foster this passion by recognizing those that bring forth ideas, and support and encourage those who go beyond their call of duty.

Part of keeping a level of interest alive includes doing more than attending routine meetings. We would be interested in having you brainstorm activities and events you would like to organize and projects you would like to contribute your time to.

We want to have you have a say in various aspects of the club and this should be an annual exercise to bring forth ideas and suggestions for change. Everything and anything should be up for evaluation; just because it's always been done a certain way, doesn't mean it should continue to be the case. We must evolve with the times because we do not want you to pick up and leave.

~73, John

It's September

We're ready for a new season. The next Surrey Amateur Radio Club general meeting is on Wednesday, September 12 at 7pm at the PREOC, Emergency Management BC, 14292 Green Timbers Way, Surrey, BC.

In addition to catching up from the summer months, this will be an important meeting to discuss future plans and the direction for the club in the months and years ahead. We value your input—Please attend.



Down The Log...

SARC Monthly Meetings

2nd Wed. (Sept-Jun)
1900 hr at the PREOC
Emergency Mgmt BC
14292 Green Timbers
Way, Surrey, BC

Weekly Club Breakfast

Saturday between 0800
and 1000 hrs at the
Kalmar Family Restaurant
8076 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 hr local
on 147.360 MHz (+)
Tone=110.9

SEPARS Net

Tuesday at 1930 hr local
on 147.360 MHz (+)
Tone=110.9

VE7RSC Repeaters

2m: 147.360MHz+
Tone= 110.9Hz
IRLP node 1736
Echolink node 496228

1.2m: 223.960 Mhz -1.6
Tone=110.9

70cm: 443.775MHz+
Tone= 110.9Hz
IRLP node 1737

SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, also accessible on IRLP node 1736 and Echolink node 496228.

On UHF we operate a repeater on 443.775MHz (+5Mhz) Tone=110.9 or IRLP Node 1737.

	SARC Net 20:00 Hrs
1 st Tuesday Standby	Drew VA7DRW Dixie VA7DIX
2 nd Tuesday Standby	Jinty VA7JMR Sheldon VA7XNL
3 rd Tuesday Standby	Rob VE7CZV Vacant
4 th Tuesday Standby	Kapila VE7KGK John VA7XB
5 th Tuesday Standby	Robert VA7FMR Vacant
Want a turn at Net Control? Contact the SARC Net Manager	



We Have A SARC Patch!

These are suitable for sewing on a jacket, cap or your jammies, so you can proudly display your support for the club.

The price is \$4 each or three for \$10 and they can be picked up at a meeting or the weekly Koffee Klatch.



*We thank our sponsors
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